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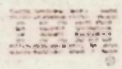
June 1, 1990

Personal systems

PERSONAL SYSTEM/2®
REFERENCE TABLES

IBM Personal Systems Technical Solutions



Personal System/2 Reference Tables
Configuration and Operating Information

David B. Whittle
Atlantic/NFM Area Systems Center
Gaithersburg, Maryland, U.S.A.

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Personal System/2 Reference Tables

Since the introduction of the IBM PERSONAL SYSTEM/2® (PS/2®) family on April 2, 1987, a wide variety of system models, expansion and enhancement alternatives, features, and peripherals have been introduced. The Personal System/2 Reference Tables that follow simplify the tasks of selecting, configuring, and expanding the various members of the PS/2 family. The tables contain information on products, services, specifications, prices, and requirements announced in the United States between April 1, 1987 and June 6, 1990.

To assist in the system-selection process, information is provided about Personal System/2 characteristics, expandability, and usability. Much of what distinguishes an IBM system from that of the competition is a careful attention to the details of human factors design that cannot be measured with simple numbers; nonetheless, even comparisons of those traits that can be measured reveal the benefits of IBM's concern for every aspect of system design. Reliability, expandability, size, weight, noise output, power use, and electromagnetic radiation levels can and should be compared during the system-selection process. In making the system-selection decision, it is also important to consider performance. Therefore, it is important to understand why benchmarks or performance comparisons are not included in this reference and to place in context many of the performance indicators, such as average disk access time, that are provided.

Benchmarks are useful only to the extent that they are clearly recognized to be limited measures of a specific component of a complex system. Rarely can any benchmark, data point, or set of benchmarks crystallize the essence of system performance into simple comparative numbers. More often, they lead to misguided decisions based upon improper interpretations of system performance characteristics. Even worse, benchmarks are often used to justify inappropriate system selection criteria and weightings far removed from the realities of daily use. Total system throughput and application performance are comprised of many interrelated factors; a bottleneck in one system subcomponent can easily negate supposed performance benefits from another ultra-fast system subcomponent. Without understanding the interrelationships between system subcomponents, decision makers might be swayed by marketing pitches that emphasize the specifications of certain sub-optimized components or carefully selected benchmarks that often demonstrate performance characteristics unrelated to actual system throughput in daily use. *No benchmark or single measurement should ever replace actual use or trial as the primary microcomputer system-selection criterion.*

Another critical consideration is that most benchmarks exclude reliability comparisons from performance considerations, rewarding companies that design for performance over reliability. During system design, performance is generally bought at the expense of reliability because state-of-the-art components are often less mature and stable. IBM systems are designed to ensure, in order of importance: personal safety, data and system integrity, reliability, compatibility, functionality, performance, and low cost. IBM's performance objective is to provide overall system throughput through balanced system design rather than to maximize individual component specifications. Thus, IBM systems will perform very well when measured by throughput or user perception of performance and extremely well when measured to include system integrity lapses as significant negative performance indicators.

Finally, most published benchmarks measure PS/2 performance under single-thread benchmarks that miss the entire design point of the multi-tasking, MICRO CHANNEL™-based PS/2. It is somewhat analogous to comparing a rocket to a jet plane using maximum attainable speed as the benchmark criterion. The jet may not perform like a rocket if orbiting the earth is the objective, but it will more likely outperform a rocket for anyone whose objectives are smooth take-offs and landings, flexibility in selecting destinations, and early arrival at those destinations.

We invite you to experience Personal System/2 ergonomics and performance first-hand before making system selection decisions and hope that this reference makes a valuable contribution towards helping you find the system and configuration that meets your needs.

Notes

- Throughout all tables, x = any substitutable character. For example, 857x-x61 represents 8570-E61, 8570-061, 8570-A61, 8570-B61, and 8573-061.
- A dagger (†) indicates that the associated product has been superseded by an enhanced product and withdrawn from marketing.

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Roger Cox	Mike Hammock	Scott Ogle	Robert Williams
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Randy Dobkin	Bill Hawkins	Rich Pasco	Malcolm Wolf
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David Whittle
Gaithersburg, Maryland

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SECTION 1. IBM PS/2 Product Line Summary

A Summary of the Personal System/2 Models, Displays, Printers, Plotters, and Scanners

IBM supports three primary operating systems on the PS/2: Disk Operating System (DOS), OPERATING SYSTEM/2® (OS/2®), and AIX™. In general, DOS is for customers requiring single-user, single-tasking applications; OS/2 is for single-user (or multiple users on local area networks), multi-tasking, and/or SYSTEMS APPLICATION ARCHITECTURE ™ (SAA™) applications; and AIX is for multi-user, multi-tasking, UNIX[1]-based applications in complex, mixed-vendor environments.

Table 1-A. DOS Systems

Product Number	Suggested Retail Price	CPU			System Board Memory			Maximum Total Memory	Std. Fixed Disk	Std. 3.5" Diskette Drive(s)	# of Free Slots	Graphics
		Type (Intel)	Speed	# of Wait States	Std.	Max.	Speed					
8525-001[1]	$1350	8086	8MHz	0	512KB	640KB	150ns	640KB	None	720KB	2-XT[2]	MCGA[3]
8525-004[1]	$1695	8086	8MHz	0	512KB	640KB	150ns	640KB	None	720KB	2-XT[1]	MCGA[4]
8525-C02[1]	$1898	8086	8MHz	0	640KB	640KB	150ns	640KB	None	720KB (2)	2-XT[2]	MCGA[3]
8525-C05[1]	$2243	8086	8MHz	0	640KB	640KB	150ns	640KB	None	720KB (2)	2-XT[2]	MCGA[4]
8525-G01	$1395	8086	8MHz	0	512KB	640KB	150ns	640KB	None	720KB	2-XT[2]	MCGA[3]
8525-G04	$1740	8086	8MHz	0	512KB	640KB	150ns	640KB	None	720KB	2-XT[2]	MCGA[4]
8525-K02	$1943	8086	8MHz	0	640KB	640KB	150ns	640KB	None	720KB (2)	2-XT[2]	MCGA[3]
8525-K05	$2288	8086	8MHz	0	640KB	640KB	150ns	640KB	None	720KB (2)	2-XT[2]	MCGA[4]
8525-L01	$2139	8086	8MHz	0	640KB	640KB	150ns	640KB	None	720KB	1-XT[2]	MCGA[3]
8525-L04	$2484	8086	8MHz	0	640KB	640KB	150ns	640KB	None	720KB	1-XT[2]	MCGA[4]
8525-W04[1]	$1695	8086	8MHz	0	512KB	640KB	150ns	640KB	None	720KB	2-XT[2]	MCGA[4]
8525-WTR[1]	$1695	8086	8MHz	0	512KB	640KB	150ns	640KB	None	720KB	2-XT[2]	MCGA[4]
8530-001	$1395	8086	8MHz	0	640KB	640KB	150ns	2.64MB[5]	None	720KB	3-XT	MCGA
8530-002†	N/A†	8086	8MHz	0	640KB	640KB	150ns	2.64MB[5]	None	720KB (2)	3-XT	MCGA
8530-R02†[6]	N/A†	8086	8MHz	0	640KB	640KB	150ns	2.64MB[5]	None	720KB (2)	3-XT	MCGA
8530-021	$1925	8086	8MHz	0	640KB	640KB	150ns	2.64MB[5]	20MB	720KB	3-XT	MCGA
8530-R21[6]	$2395	8086	8MHz	0	640KB	640KB	150ns	2.64MB[5]	20MB	720KB	3-XT	MCGA

NOTES:

• All systems include a keyboard, integrated serial, parallel, and mouse ports, integrated disk and display connectors, and a clock-calendar with battery.

[1] Includes IBM Space Saving Keyboard.

[2] One available slot is an 8-inch short slot, i.e. half-slot.

[3] Includes built-in, 12-inch monochrome display as part of base system.

[4] Includes built-in, 12-inch color display as part of base system.

[5] Requires special consideration involving configuration and availability of conventional vs. extended, and/or expanded memory. You may need assistance in determining suitability to your needs.

[6] The Model R02/R21's 50-key function keyboard is supported only by banking-specific application programs, not by general purpose personal computer applications.

[1] UNIX is a registered trademark of AT&T in the United States of America and other countries.

Table 1-B. Systems Capable of Supporting DOS or OS/2

Product Number	Suggested Retail Price	CPU			System Board Memory			Maximum Total Memory[3]	Std. Fixed Disk	Std. 3.5" Diskette Drive(s)	# of Free Slots	Graphics
		Type (Intel)	Speed	# of Wait States	Std.	Max.	Speed					
8525-006[1]	$2295	80286	10MHz	1	512KB	4MB[2]	120ns	16MB	None	1.44MB	2-AT[4]	VGA[5]
8525-036[1]	$2995	80286	10MHz	1	1MB	4MB[2]	120ns	16MB	30MB	1.44MB	2-AT[4]	VGA[5]
8525-G06	$2340	80286	10MHz	1	512KB	4MB[7]	120ns	16MB	None	1.44MB	2-AT[4]	VGA[5]
8525-G36	$3040	80286	10MHz	1	1MB	4MB[7]	120ns	16MB	30MB	1.44MB	2-AT[4]	VGA[5]
8530-E01	$1995	80286	10MHz	1	1MB	4MB[2]	120ns	16MB	None	1.44MB	3-AT	VGA
8530-E0R[6]	$1995	80286	10MHz	1	1MB	4MB[2]	120ns	16MB	None	1.44MB	3-AT	VGA
8530-E21	$2345	80286	10MHz	1	1MB	4MB[7]	120ns	16MB	20MB	1.44MB	3-AT	VGA
8530-E2R[6]	$2595	80286	10MHz	1	1MB	4MB[7]	120ns	16MB	20MB	1.44MB	3-AT	VGA
8530-E31	$2495	80286	10MHz	1	1MB	4MB[7]	120ns	16MB	30MB	1.44MB	3-AT	VGA
8550-021[†]	N/A[†]	80286	10MHz	1	1MB	1MB	120ns	16MB	20MB	1.44MB[8]	3-MC	VGA
8550-R21[†6]	N/A[†]	80286	10MHz	1	1MB	1MB	120ns	16MB	20MB	1.44MB[8]	3-MC	VGA
8550-031	$2745	80286	10MHz	0[9]	1MB	2MB[2]	85ns	16MB	30MB	1.44MB	3-MC	VGA
8550-061	$3195	80286	10MHz	0[9]	1MB	2MB[2]	85ns	16MB	60MB	1.44MB	3-MC	VGA
8560-041	$4195	80286	10MHz	1	1MB	1MB	120ns	16MB	44MB	1.44MB[8]	7-MC	VGA
8560-071	$4645	80286	10MHz	1	1MB	1MB	120ns	16MB	70MB	1.44MB[8]	7-MC	VGA

NOTES:

- All systems include a keyboard, integrated serial, parallel, and mouse ports, integrated disk and display connectors, and a clock-calendar with battery.
- All systems in this table require additional memory and/or disk for OS/2. Refer to SECTION 6 for estimated memory and disk requirements.

[1] Includes IBM Space Saving Keyboard.

[2] Requires the replacement of the standard memory module(s) on the system board.

[3] The 80286 processor can address a maximum of 16MB of memory. 512KB is allocated to the following functions: BIOS, Video, and Adapter ROM. This limits usable RAM to 16MB.

[4] One available slot is an 8-inch short slot, i.e. a half-slot.

[5] Includes built-in 12-inch color display (.28mm pels) as part of base system.

[6] This model comes with a 50-key function keyboard that is supported only by banking-specific application programs, not by general purpose personal computer applications.

[7] Requires special consideration involving configuration and availability of conventional vs. extended, and/or expanded memory. You may need assistance in determining suitability to your needs.

[8] To ensure proper operation of the diskette drive, this model requires the DASDDRVR.SYS device driver when running DOS Version 3.3 or higher. The driver is not required when running OS/2.

[9] Expansion adapter memory that runs at 120ns adds a wait state for processor access to that memory.

Table 1-C. Systems Capable of Supporting DOS, OS/2, or AIX

Product Number	Suggested Retail Price	CPU			System Board Memory			Maximum Total Memory	Std. Fixed Disk	Std. 3.5" Diskette Drive(s)	# of Free Slots	Graphics
		Type (Intel)	Speed	# of Wait States	Std.	Max.	Speed					
8555-031	$3495	80386SX	16MHz	0-2[1,2]	2MB[3]	8MB	85ns	16MB[4]	30MB	1.44MB	3-MC	VGA
8555-R31[5]	$3895	80386SX	16MHz	0-2[1,2]	2MB[3]	8MB	85ns	16MB[4]	30MB	1.44MB	3-MC	VGA
8555-061	$3895	80386SX	16MHz	0-2[1,2]	2MB[3]	8MB	85ns	16MB[4]	60MB	1.44MB	3-MC	VGA
8555-R61[5]	$4295	80386SX	16MHz	0-2[1,2]	2MB[3]	8MB	85ns	16MB[4]	60MB	1.44MB	3-MC	VGA
8565-061	$5295	80386SX	16MHz	0-2[1,2]	2MB[3]	8MB	100ns	16MB[4]	60MB[12]	1.44MB	7-MC	VGA
8565-121	$5995	80386SX	16MHz	0-2[1,2]	2MB[3]	8MB	100ns	16MB[4]	120MB[12]	1.44MB	7-MC	VGA
8570-E61	$5495	80386	16MHz	0-2[1]	2MB[3]	6MB[6]	100ns	16MB	60MB	1.44MB	3-MC	VGA
8570-061	$5795	80386	20MHz	0-2[1]	2MB[3]	6MB	85ns	16MB	60MB	1.44MB	3-MC	VGA
8570-121	$6395	80386	20MHz	0-2[1]	2MB[3]	6MB	85ns	16MB	120MB	1.44MB	3-MC	VGA
8570-A61[7]	$8395	80386	25MHz	0-5[1]	2MB[3]	8MB	80ns[7]	16MB	60MB	1.44MB	3-MC	VGA
8570-A21[7]	$8995	80386	25MHz	0-5[1]	2MB[3]	8MB	80ns[7]	16MB	120MB	1.44MB	3-MC	VGA
8570-B61[8]	$12390	80486	25MHz	0-5[1]	2MB[3]	8MB	80ns[8]	16MB	60MB	1.44MB	3-MC	VGA
8570-B21[8]	$12990	80486	25MHz	0-5[1]	2MB[3]	8MB	80ns[8]	16MB	120MB	1.44MB	3-MC	VGA
8573-031	$5995	80386	16MHz	0-2[1]	2MB[3]	8MB	85ns	16MB	30MB	1.44MB	2-MC[9]	VGA[10]
8573-061	$7695	80386	20MHz	0-2[1]	4MB[3]	8MB	85ns	16MB	60MB	1.44MB	2-MC[9]	VGA[10]
8573-121	$8295	80386	20MHz	0-2[1]	4MB[3]	8MB	85ns	16MB	120MB	1.44MB	2-MC[9]	VGA[10]
8580-041	$5395	80386	16MHz	1	1MB	2MB	80ns	16MB	44MB	1.44MB[11]	7-MC	VGA
8580-071	$6095	80386	16MHz	1	2MB	2MB	80ns	16MB	70MB	1.44MB[11]	7-MC	VGA
8580-111	$6995	80386	20MHz	0-2[1]	2MB[3]	4MB	80ns	16MB	115MB	1.44MB[11]	7-MC	VGA
8580-121	$7495	80386	20MHz	0-2[1]	2MB[3]	4MB	80ns	16MB	120MB[13]	1.44MB	7-MC	VGA
8580-A21[7]	$10695	80386	25MHz	0-5[1]	4MB[3]	8MB	80ns	16MB	120MB[12]	1.44MB	7-MC	VGA
8580-311	$9395	80386	20MHz	0-2[1]	2MB[3]	4MB	80ns	16MB	314MB	1.44MB[13]	7-MC	VGA
8580-321	$9895	80386	20MHz	0-2[1]	2MB[3]	4MB	80ns	16MB	320MB[13]	1.44MB	7-MC	VGA
8580-A31[7]	$13195	80386	25MHz	0-5[1]	4MB[3]	8MB	80ns	16MB	320MB[13]	1.44MB	7-MC	VGA

NOTES:

- All systems include a keyboard, integrated serial, parallel, and mouse ports, integrated disk and display connectors, and a clock-calendar with battery.
- Not all systems above support OS/2 and AIX in their standard configuration—additional memory and/or disk may be required. You may need assistance to determine the appropriate configuration for your needs.

[1] Uses Page Memory Logic. Accessing memory outside the most recently used page (one page = 2KB) requires one wait state. Writing data to memory also requires one wait state. Therefore, read access from the current page requires no wait states, read access outside the current page or a write to the current page require one wait state, and a write to outside the current page requires two wait states.

[2] Expansion adapter memory that runs at 120ns adds a wait state for processor access to that memory.

[3] BIOS uses 128KB of system memory as shadow memory in order to improve system performance.

[4] The 80386SX processor can address a maximum of 16MB of memory. 512KB is allocated to the following functions: BIOS, Video, and Adapter ROM. This limits usable RAM to 15.5MB.

[5] This model comes with a 50-key function keyboard that is supported only by banking-specific application programs, not by general purpose personal computer applications.

[6] Early models require the replacement of 1MB module(s) on the system board with 2MB modules(s).

[7] Includes 30ns 64KB memory cache. Cached data is accessed with zero wait states.

[8] Includes 8KB memory cache and math co-processor internal to the processor. Cached data is accessed with zero wait states.

[9] One available slot is a short slot, i.e. half-slot.

[10] Includes built-in plasma (orange) display as part of base system. A regular color or monochrome PS/2 display may be attached for desktop use.

[11] For the diskette drive to operate properly, this model requires the DASDDRVR.SYS device driver when running DOS Version 3.3 or higher. The driver is not required when running OS/2.

[12] SCSI drive; this system includes a SCSI adapter that provides enhanced expansion capability.

Table 1-D. Displays

Product Number	Suggested Retail Price	Type	Swivel Stand Included?	Size	Pel Size	Maximum Graphics Resolution	Text Resolution	Notes
8503-001	$275	Monochrome	Yes	12"	.28mm	640x480	720x400	For MCGA or VGA. Up to 64 shades of gray.
8506-001	$1295	Monochrome	Yes	17"	.25mm	848x1200	848x1200	For PS/2 Image Adapter/A. Feature #4324. Up to 16 shades of gray from a range of 256 shades.
8507-001	$865	Monochrome	Yes	19"	.35mm	1024x768	1024x768	For MCGA, VGA, or 8514/A. Feature #4054. Up to 64 shades of gray.
8508-001	$1295	Monochrome	Yes	19"	.22mm	1600x1200	1600x1200	For PS/2 Image Adapter/A. Feature #4324. Up to 16 shades of gray from a range of 256.
8512-001	$623	Color	No	14"	.41mm	640x480	720x400	For MCGA or VGA. Up to 256 colors from a range of 256K.
8513-001	$750	Color	Yes	12"	.28mm	640x480	720x400	For MCGA or VGA. Up to 256 colors from a range of 256K.
8514-001	$1620	Color	Yes	16"	.31mm	1024x768	1024x768	For MCGA, VGA, or 8514/A. Feature #4324. Up to 256 colors from a range of 256K colors.
8515-001	$950	Color	Yes	14"	.28mm	1024x768	1024x768	For MCGA, VGA, or 8514/A, Feature #4324. Up to 256 colors from a range of 256K colors.

Table 1-E. Printers

Name	Product Number	Suggested Retail Price	Speed		Max Resolution	Max Paper Size[1]	Acoustic Output (dBA)	Optional Interface(s)	Notes
			Quality	Draft					
IBM PagePrinter	3812-002	$10380	12 pg/min	-	240x240	A/A4	56	RS-422-C	18,000 pg/mo.
IBM PagePrinter	3816-01D	$22570	24 pg/min	-	240x240	A/A4	55	-	40,000 pg/mo. Also includes serial interface.
IBM PagePrinter	3816-01S	$17320	24 pg/min	-	240x240	A/A4	53	-	40,000 pg/mo. Also includes serial interface.
IBM LaserPrinter	4019-001	$2395	10 pg/min	-	300x300	A/A4	50	-	20,000 pg/mo. Also includes serial interface.
IBM LaserPrinter E	4019-E01	$1495	5 pg/min	-	300x300	A/A4	50	-	20,000 pg/mo. Also includes serial interface.
IBM ProPrinter™ II	4201-002	$449	40 cps	240 cps	144x240	8"	60	Serial	Includes 4KB Print Buffer. Serial interface requires cable #6031.
IBM ProPrinter III	4201-003	$599	65 cps	320 cps	144x240	8"	59	RS-232 RS-422	Includes Propark, 7KB Print Buffer. Serial interfaces require cable #6031.
IBM ProPrinter II XL	4202-002	$579	40 cps	240 cps	144x240	13.6"	60	Serial	Includes 4KB Print Buffer. Serial interface requires cable #6031.
IBM ProPrinter III XL	4202-003	$799	65 cps	320 cps	144x240	13.6"	59	RS-232 RS-422	Includes Propark, 7KB Print Buffer. Serial interfaces require cable #6031.
IBM ProPrinter X24E	4207-002	$859	80 cps	286 cps	180x360	8"	58	RS-232 RS-422	Includes Propark, 14KB Print Buffer. Serial interfaces require cable #6031.
IBM ProPrinter XL24E	4208-002	$1099	80 cps	268 cps	180x360	13.6"	58	RS-232 RS-422	Includes Propark, 14KB Print Buffer. Serial interfaces require cable #6031.
IBM Personal PagePrinter II	4216-031	$4999	6 pg/min	-	300x300	A/A4	52	Serial Appletalk	1,000 pgs/mo.
IBM QuietWriter® Printer Model 2	5201-002	$1080	60 cps	-	240x240	13.2"	50	-	Includes 15KB Print Buffer.
IBM QuietWriter III	5202-001	$1815	80 cps	274 cps	240x240	13.2"	45	-	Includes 15KB Print Buffer.
IBM QuickWriter®	5204-001	$1765	65 cps	396 cps	180x360	13.2"	59	-	Also includes serial interface.

NOTES:

- All printers include a standard parallel interface.

[1] Paper Sizes - A(8.5"x11") or A4(210x297mm); B(11"x17") or A3(297x420mm); C(17"x22") or A2(420x594mm); D(22"x34") or A1(594x841mm); E(24"x44") or A0(841x1188mm).

Table 1-F. Plotters

Product Number	Suggested Retail Price	Speed (in/sec)	Resolution (inches)	Max Paper Size[1]	# of Pens	Interfaces	Repeatability (inches)	Notes
6180-001	$1285	20.0	0.001	A/A4	8	RS-232-C IEEE-488	0.004	Includes 60KB Data Buffer. Expands to 1MB (#5010).
6180-002	$1285	20.0	0.001	A/A4	8	IEEE-488	0.004	Includes 60KB Data Buffer. Expands to 1MB (#5010).
6182-001	$4150	31.5	0.001	B/A3	8	RS-232-D IEEE-488	0.004	Suitable for Engineering/CAD/Scientific Graphics. Auto-feed paper handler.
6184-001	$4150	19.7	0.001	D/A1	8	RS-232-D IEEE-488	0.004	Suitable for Engineering/CAD/Scientific Graphics.
6185-001	$5245	32.0	0.001	D/A1[2]	8	RS-232-D IEEE-488	0.004	Architecture Sizes C & D Optional.
6185-002	$6820	32.0	0.001	E/A0	8	RS-232-D IEEE-488	0.004	Includes 31KB Data Buffer. Expands to 1MB (#5011) or 2MB (#5012).
6186-001†	N/A†	24.0	0.00098	E/A0	8	RS-232-C RS-422-A IEEE-488	0.004	Includes 26KB Data Buffer.
6186-002†	N/A†	24.0	0.00098	E/A0	8	RS-232-C RS-422-A IEEE-488	0.004	Includes 26KB Data Buffer.
6187-001	$8495	32.0	0.00098	E/A0[2]	8	EIA-232-D IEEE-488	0.004	Includes 1MB Data Buffer. Architecture Sizes C, D, & E Optional.
6187-002	$10490	32.0	0.00098	E/A0[2]	8	EIA-232-D IEEE-488	0.004	Includes 1MB Data Buffer. Architecture Sizes C, D, & E Optional.
7372-001	$1955	20.0	0.001	B/A3	6	RS-232-D IEEE-488	0.004	Suitable for Engineering/CAD/Scientific Graphics.
7374-001	$10000	24.0	0.001	D/A1	8	RS-232-C IEEE-488	0.002	Features Switchable RS-232-C/Parallel Interface Adapter.
7375-001†	N/A†	24.0	0.001	E/A0	8	RS-232-C IEEE-488	0.002	Features Switchable RS-232-C/Parallel Interface Adapter.
7375-002†	N/A†	24.0	0.001	E/A0	8	RS-232-C IEEE-488	0.002	Features Switchable RS-232-C/Parallel Interface Adapter.

NOTES:

[1] Paper Sizes - A(8.5"x11") or A4(210x297mm); B(11"x17") or A3(297x420mm); C(17"x22") or A2(420x594mm); D(22"x34") or A1(594x841mm); E(24"x44") or A0(841x1188mm).

[2] Architecture Paper Sizes - C(18"x24"); D(24"x36"); E (36"x48").

Table 1-G. Scanners

Product Number	Suggested Retail Price	Speed (sec/pg)	Resolution (pels/inch)	Max Paper Size[1]	Interfaces	Notes
3117-010	$1795	30.0	240x240	A/A4	RS-422	For all PCs and PS/2s[3]. Requires #4555, #4925/#3005, or #1029/#3005.
3118-010	$4440	12.0	240x240	A/A4	RS-422	For all PCs and PS/2s[3]. Requires #4920/#2067, #1028/#0217, #2074/#2067, or #0215/#0217.
3118-020	$4935	12.0	240x240	A/A4	RS-422	For all PCs and PS/2s[3]. Requires #4920/#2067, #1028/#0217, #2074/#2067, or #0215/#0217. Includes Auto Document Feed.
3119-S10	$2585	28.0	300x300	A/A4	-	For any Micro Channel PS/2. PageScanner convenience kit; includes scanner, adapter (#5442), and cable (#3005).
3119-010	$1560	28.0	300x300	A/A4	-	For any Micro Channel PS/2. Requires #5442/#3005.

NOTES:

[1] Paper Sizes - A(8.5"x11") or A4(210x297mm); B(11"x17") or A3(297x420mm); C(17"x22") or A2(420x594mm); D(22"x34") or A1(594x841mm); E(34"x44") or A0(841x1188mm).

[2] May also be attached to a 3193 Display Station.

[3] May also be attached to a 3193 Display Station or a 3174 or 3274 Control Unit Model 31A, 31C, 31D, 41A, 41C, 41D, 51C, or 61C w/configuration support D at release level 65 or higher, using #2067.

SECTION 2. IBM PS/2 Selected Features Summary

General-purpose Personal System/2 expansion features, listed by feature code within order number

This section highlights selected IBM features only; it is not a comprehensive listing of all adapters and/or options available for the PS/2 product line. There are thousands of additional complementary products available from IBM, dealers, and other sources.

Table 2-A. Memory Adapters

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory			Notes
				Std.	Max.	Speed	
IBM Personal System/2 80286 Memory Expansion Option[1]	N/A†	#3006†	6450344	512KB	2MB	150ns	For 8550-xxx or 8560-xxx. Uses #3012.
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	For 8555-xxx, 857x-xxx or 8580-xxx[1]. Uses #5212, #5213, and/or #3933.
IBM Personal System/2 80386 Memory Expansion Option[1]	N/A†	#3019†	6450367	2MB	6MB	80ns	For 857x-xxx or 8580-xxx, replaced by #3077. Uses #3064.
PS/2 Enhanced 80386 Memory Expansion Option 2MB Kit	$1395	#3077	34F3077	2MB	14MB	85ns	For 857x-xxx or 8580-xxx[1]. Uses #5212, #5213, and/or #3933.
3.0MB Expanded Memory Adapter	$2280	#3864	34F2864	3MB	12MB	120ns	For 8530-Exx. Includes #3863, #8635, and six sets of #3397.
IBM 2MB Expanded Memory Adapter	$1395	#3905	2685193	2MB	2MB	150ns	For 8530-0xx. Fully populated.
IBM Personal System/2 2MB Expanded Memory Adapter/A† [2]	N/A†	#3920†	1497252	2MB	8MB	120ns	For 8550-xxx or 8560-xxx. Uses #3397/#7833[2].
IBM Personal System/2 2-8MB 80386 Memory Expansion Option	$1395	#5211	6450605	2MB	8MB	85ns	For 857x-xxx or 8580-xxx, replaced by #3077. Uses #5212/#5213.
IBM Personal System/2 0-8MB Expanded Memory Adapter/A†	N/A†	#7259†	1497259	0MB	8MB	120ns	For 855x-xxx or 8560-xxx, replaced by #8286. Uses #3397/#7833.
IBM Personal System/2 2-8MB 80286 Memory Expansion Option[3]	$1395	#8286	6450609	2MB	8MB	85ns	For 855x-xxx or 856x-xxx. Uses #5212/#5213.
IBM Personal System/2 Multifunction Adapter[4]	$495	#8635	30F5364	0MB	12MB	120ns	For 8530-Exx. Uses #3397/#7833.

NOTES:

- All PS/2 memory expansion alternatives listed above offer memory which can be used, except when installed in 8086-based systems, as extended memory (for OS/2, VDISK, or IBMCACHE).
- All PS/2 memory expansion alternatives listed above offer memory which can be used, except when installed in 8086-based system or the Model 30 286, as expanded memory using the drivers provided under DOS 4.00 for applications written to Lotus[2]/Intel[3]/Microsoft[4] Expanded Memory Specification 4.0 (LIM EMS 4.0).
- For improved performance under certain circumstances, populate the system board before adding adapters.

[1] The PS/2 Enhanced 80386 Memory Expansion Options, 2MB Kit and 4MB Kit, require a minimum of 2MB installed system board memory prior to adapter installation.

[2] The IBM 2MB Expanded Memory Adapter/A, Feature #3920†, comes fully populated with four sets of modules identical to the 0.5MB Feature #3397, which consists of two 256KB modules. The adapter can be expanded from the standard 2MB configuration up to 8MB by replacing any or all of the eight 256KB modules on the board with the 2MB Feature #7833, which consists of two 1MB modules. Once removed, two of the 256KB modules can be used as if they were the 0.5MB Feature #3397.

[3] The IBM Personal System/2 2-8MB 80286 Memory Expansion Option, Feature #8286, should be placed in a higher numbered slot than Features #3920† or #7259† when used concurrently in the 8550-021†, 8560-041, or 8560-071.

[4] The IBM Personal System/2 Multifunction Adapter, Feature #8635, includes one parallel and one serial port in addition to memory expansion spaces. When two Multifunction Adapters are installed in the same system, it is necessary to disable the serial port on the system board in order to achieve full operation of three parallel and two serial ports. This adapter does not support the IBM 3270 Workstation Program Versions 1.0 or 1.1 or the DOS 4.00 expanded memory drivers, but does support LIM EMS 4.0 when used in conjunction with Above Disc[5] 2.0, which is not included with the adapter and must be purchased separately (Order Vehicle 5871-AAA/Feature #5448/Part 30F5448). Above Disc works under PC DOS Version 3.30 or higher. Alternatively, Feature #3863 (see Table 2-D on page 8) may be used with this adapter to provide LIM EMS 4.0 expanded memory or to allow the use of certain portions of the reserved memory between 640KB and 1MB.

2 Lotus is a registered trademark of Lotus Development Corporation.

3 Intel is a trademark of Intel Corporation.

4 Microsoft is a registered trademark of Microsoft Corporation.

Table 2-B. Memory Modules

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory			Notes (P) = Planar/System Board
				Std.	# of Modules	Speed	
IBM Personal System/2 4MB System Board Memory Expansion Kit	$1995	#1060	6451060	4MB	1	80ns	For 8580-Axx (P).
IBM Personal System/2 System Board Memory Expansion Kit	$728	#3009	6450375	1MB	1	80ns	For 8580-041 (P).
IBM Personal System/2 80286 Memory Expansion Kit	$215	#3012	6450345	512KB	2	150ns	For #3006†.
IBM Personal System/2 80386 Memory Expansion Kit	$995	#3064	6450372	2MB	1	80ns	For #3019†.
0.5MB Memory Module Kit	$215	#3397	30F5348	512KB	2	120ns	For 8525-xx6 (P), 8530-Exx (P), #7259†, or #8635.
4.0MB Expanded Memory Option	$2155	#3866	34F2866	4MB	4	120ns	For 8525-xx6 or 8530-Exx. Includes Feature #3863 (See Table 2-D on 8) and two sets of Feature #7833.
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	1	85ns	For 8555-xxx (P), 8565-xxx (P), #3011, or #3077.
128KB Memory Expansion Kit	$52	#4105	78X8955	128KB	1	150ns	For 8525-001/-004/-G01/-G04 (P).
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1	85ns	For 857x-x61 (P), 8570-121 (P), 8555-xxx (P), 8565-xxx (P), #8286, #5211, #3011, or #3077.
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	1	85ns	For 8550-031/-061 (P), 8555-xxx (P), 8565-xxx (P), 857x-x61/-121 (P), #8286, #5211, #3011, or #3077.
IBM Personal Sytem/2 2MB Memory Module Kit—80ns	$1495	#5214	6450608	2MB	1	80ns	For 8570-Axx (P) or 8570-Bxx (P).
2MB Memory Module Kit	$860	#7833	30F5360	2MB	2	120ns	For 8525-xx6 (P), 8530-Exx (P), #3920†, #7259†, or #8635.
80386 System Board Memory Expansion Kit	$995	#8722	6450379	2MB	1	80ns	For 8580-111/-121/-311/-321 (P).

NOTES:

- All PS/2 memory expansion alternatives listed above offer memory which can be used, except when installed in 8086-based systems, as extended memory (for OS/2, VDISK, or IBMCACHE).
- All PS/2 memory expansion alternatives listed above offer memory which can be used, except when installed in an 8086-based system or Model 30 286, as expanded memory using the drivers provided under DOS 4.00 for applications written to LIM EMS 4.0.

† The IBM 2MB Expanded Memory Adapter/A, Feature #3920†, comes fully populated with four sets of modules identical to the 0.5MB Feature #3397, which consists of two 256KB modules. The adapter can be expanded from the standard 2MB configuration up to 8MB by replacing any or all of the eight 256KB modules on the board with the 2MB Feature #7833, which consists of two 1MB modules. Once removed, two of the 256KB modules can be used as if they were the 0.5MB Feature #3397.

[5] Above Disc is a registered trademark of Teleware West Company.

Table 2-C. Graphics Features

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes
IBM PS/2 Image Adapter/A Printer Scanner Option	$509	8550-ZZZ	#1632	07F4402	For #4324. Enables support for specific printers and scanners.
IBM PS/2 Image Adapter/A Memory Expansion Kit	$495	8550-ZZZ	#3231	07F4406	For #4324. Increases memory from 1MB to 2MB for improved performance.
IBM Personal System/2 Display Adapter	$430	8530-ZZZ	#4050	1887744	VGA Adapter for 8530-0xx. For use with 85xx displays.
Display Adapter 8514/A	$1350	8550-ZZZ	#4054	1887972	For 855x-xxx, 856x-xxx, 8570-xxx, and 8580-xxx. 1024x768 w/16 of 256K colors. Uses #4081.
8514 Memory Expansion Kit	$283	8550-ZZZ	#4081	1887989	For #4054. Increases the number of simultaneous colors or gray shades that can be displayed to 256 and 64 respectively.
IBM PS/2 Image Adapter/A	$1695	8550-QQQ	#4324	07F4400	For all Micro Channel PS/2 systems w/8506 or 8508 displays. Requires 1 slot. Uses #1632 and #3231. Uses #4081.
Color Display Stand	$36	8530-ZZZ	#5004	1501215	For 8512. All other 85xx displays come with stand.

NOTES:

- All PS/2 systems come standard with either an MCGA or VGA integrated graphics connector. Either a monochrome analog display such as the 8503, 8506, or 8507 or a color analog display such as the 8512, 8513, 8514, or 8515 may be attached interchangeably. Monochrome displays show color graphics applications in either 16 or 64 shades of gray depending on graphics mode and do not require special software or configuration. VGA systems are fully compatible with VGA, EGA, MCGA, and CGA graphics applications; while MCGA systems are compatible with MCGA and CGA graphics applications as well as certain VGA modes. VGA provides numerous graphics and text modes including all EGA modes and a mode with a resolution of 640x480 in a maximum of 16 simultaneous colors or gray shades. MCGA provides fewer graphics modes, but provides all CGA modes and a 640x480 mode in 2 colors and a 320x200 mode in a maximum of 256 simultaneous colors or 64 gray shades. The 8514/A Graphics Adapter/A provides a mode with a resolution of 1024x768 with 16 colors; however, the 8514 Display is required to achieve a resolution better than 720x480. Otherwise, any 85xx PS/2 Display may be used with any PS/2 graphics connector.
- See Table 4-B on page 23 for additional information on IBM PS/2 Displays.

Table 2-D. System Enhancements

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes (P) = Planar/System Board
IBM Personal System/2 80287 Math Co-Processor (10MHz)	$612	8550-ZZZ	#3001	6450356	For 8525-xx6 (P), 8530-Exx (P), 8550-xxx (P), or 8560-xxx (P).
IBM Personal System/2 80387 Math Co-Processor (16MHz)	$818	8550-ZZZ	#3002	6450369	For 8570-E61 (P) or 8580-0x1 (P).
IBM Personal System/2 Wizard Memory Expansion Option[3]	$3685	8550-ZZZ	#3461	34F3061	For #3462. 6MB memory expansion daughter card. No slot required in addition to the two allocated for #3462.
IBM Personal System/2 Wizard Adapter[3]	$7000	8550-ZZZ	#3462	34F3062	For 8570-xxx and 8580-xxx. Uses #3461. Application accelerator bus-master adapter. Two full-size slots are required to meet power requirements.
All Chargecard[1]	$495	8530-ZZZ	#3863	34F2863	For 8525-xx6 (P) or 8530-Exx (P). No slot required; however, installation limits the use of one available slot to a half-size (8-inch) adapter.
IBM Personal System/2 80387SX Math Co-Processor (16MHz)	$795	8550-ZZZ	#4676	27F4676	For 8555-xxx (P).
8087 Math Co-Processor (8MHz)	$333	8530-ZZZ	#5001	1501217	For 8525-xxx (P) or 8530-0xx (P).
IBM Personal System/2 486/25 Power Platform[2]	$3995	8550-ZZZ	#5220	6450876	For 8570-Axx (P). Microprocessor component replacement.
IBM Personal System/2 80387 Math Co-Processor (25MHz)	$1330	8550-ZZZ	#6320	6450607	For 8570-Axx (P) or 8580-Axx (P).
IBM Personal System/2 80387 Math Co-Processor (20MHz)	$1230	8550-ZZZ	#8720	6450378	For 8570-061/-121 (P), 8573-xxx (P), or 8580-x11 (P).

NOTES:

[1] The All Chargecard[6] will work with all installed IBM memory in a Model 30 286 or 25 286 to support LIM EMS 4.0, the IBM Workstation Connectivity Memory Manager Enhancement, and Software Carousel[7] Version 3. Furthermore, the All Chargecard can be used to load device drivers and terminate-and-stay-resident (TSR) programs into unused memory addresses between 640KB and 1024KB. This capability can be used in some local area network (LAN) and host attach environments to increase the amount of memory available for other applications. The All Chargecard installs directly on the system board and does not require an open option card slot; however, installation of the All Chargecard reduces the size of the option card that can be installed in one of the three slots from a full sized card to a card eight inches long or less.

[2] This microprocessor upgrade includes a 25MHz Intel i486 32-bit microprocessor featuring an internal memory cache controller, an internal 8KB cache, and an internal floating-point processing unit. The 486/25 Power Platform is to be installed by IBM or an IBM Authorized Remarketer. Contact your IBM representative to arrange for this installation. Parts removed or replaced become the property of IBM and must be returned. Customers may keep the 80387 Math Co-Processor, if desired.

[3] The IBM PS/2 Wizard Adapter, an application accelerator bus-master card for the IBM PS/2 Models 70 and 80, significantly increases performance by adding a 33MHz Intel i860 microprocessor for advanced, numeric-intensive applications. The i860 processor features a RISC integer core, an advanced floating point processing unit, a graphics unit, internal instruction cache and internal data cache in a single 1-million transistor chip. The adapter also contains 2MB of random access memory (RAM), which is expandable to a total of 8MB using the IBM PS/2 Wizard Memory Expansion Option. The Wizard Adapter uses a set of application device drivers, shipped with the product, that enable operation with OS/2. It is IBM's intention to provide AIX support for the IBM PS/2 Wizard Adapter on PS/2 systems in a future release.

Table 2-E. Diskette Drives

Feature Name	Suggested Retail Price	Product Number / Ordering Vehicle	Feature Number	Part Number	Notes
5.25" External Diskette Drive (360KB)	$512	4869-001	-	4869001	Requires #8750 for 8525-xxx or 8530-xxx. Requires #8760 or #1007 for 855x-xxx, 856x-xxx, or 8570-xxx. Requires #8760, #1007, or #2716 for 8573-xxx.
5.25" External Diskette Drive (1.2MB)	$509	4869-002	-	4869002	Requires #1007 for any Micro Channel PS/2.
5.25" Internal Diskette Drive (1.2MB)	$280	N/A[1]	N/A[1]	6451006	For all Micro Channel PS/2 systems. Requires #1007 and available fixed disk drive bay. 4869-00x may also be attached to the #1007.
5.25" External Diskette Drive Adapter/A (360KB/1.2MB)	$216	N/A[1]	#1007	6451007	For all Micro Channel PS/2 systems except 8573-xxx. One slot required. Limit one per system. Attach 4869-001/-002 or PN 6451006. Includes DOS and OS/2 drivers. May be used concurrently with #8760 or #2716.
1.44MB 2nd 3.5" Diskette Drive (1" high)	$263	8530-ZZZ	#1026	6451026	For 8530-E01[2], 8530-001, 8565-xxx, 8580-121/-321, and 8580-Axx. Requires available diskette bay. 8530-E01 requires #1034. 8565-xxx and 8580-Axx require #1059.
720KB 2nd 3.5" Diskette Drive (1" high)	$159	8530-ZZZ	#1027	6451027	For 8530-001. Requires #4106 and available diskette bay.
5.25" External Diskette Adapter Cable	$21	8530-ZZZ	#1033	6451033	Required with #8750 in 8530-001/-021 with serial numbers 2500000-2999999.
1.44MB 2nd 3.5" Diskette Drive Kit A (1" high)	$25	8530-ZZZ	#1034	6451034	Required for #1026 in 8530-E01[2].
1.44MB 2nd 3.5" Diskette Drive Kit A	$30	8530-ZZZ	#1037	6451037	Required for #3057 in 8530-E01[2].
720KB 1" High Diskette Drive	$159	8525-ZZZ	#1056	6451056	For 8525-xxx (except 8525-xx6) w/serial numbers higher than 100000.
1.44MB 1" High Diskette Drive Kit C	$15	8550-ZZZ	#1059	6451059	Required for #1026 on 8580-Axx and 8565-xxx. Includes bezel and instructions.
1.44MB 1" High Diskette Drive 1	$263	8530-ZZZ	#1063	6451063	For 8525-xx6.
External Storage Device Cable	$101	8550-ZZZ	#2716	23F2716	For 8573-xxx. Attach 4869-001. No adapter required.
1.44MB 2nd 3.5" Diskette Drive	$263	8550-ZZZ	#3057	6450353	For 8530-E01[2], 8550-xxx, 8560-xxx, 8570-xxx, and 8580-xxx. Requires available diskette bay.
720KB 2nd 3.5" Diskette Drive	$180	8530-ZZZ	#4106	78X8956	For 8525-001/-004/-G01/-G04/-L0x. Requires available diskette bay.
5.25" External Diskette Adapter Kit (360KB)	$18	8530-ZZZ	#4114	27F4245	Required with #8750 in 8530-E01 or 8525-xx6.
5.25" External Diskette Drive Adapter (360KB)	$72	8530-ZZZ	#8750	6450244	For 8525-xxx and 8530-xxx. One slot required. Limit one per system. Attach 4869-001. #1033 is also required for 8530-001/-021 if system serial number is between 2500000 and 2999999.
5.25" External Diskette Drive Adapter/A (360KB)	$72	8550-ZZZ	#8760	6450245	For 8550-xxx, 8560-xxx, 8570-xxx, and 8580-xxx. One slot required. Limit one per system. Attach 4869-001.

NOTES:

[1] Available only through IBM Authorized Dealers.

[2] #1026 w/#1034 must be used for 8530-E01 with first diskette drive indicator light *below* the media insertion slot. #3057 w/#1037 must be used for 8530-E01 with first diskette drive indicator light *above* the media insertion slot.

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[6] All Chargecard is a trademark of All Computers Inc.

[7] Software Carousel is a trademark of SoftLogic Solutions Inc.

Table 2-F. Fixed Disk Drives

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes
Personal System/2 Micro Channel SCSI Adapter	$495	8550-ZZZ	#1005	6451005	16-bit bus-master adapter for all Micro Channel PS/2 systems. One 16-bit or 32-bit slot required.
Personal System/2 Micro Channel SCSI Adapter w/Cache	$995	8550-ZZZ	#1018	6451018	32-bit bus-master adapter for all Micro Channel PS/2 systems. One 16-bit or 32-bit slot required. Feature #1039 is required when no external SCSI device is attached.
Personal System/2 30MB Fixed Disk Drive	$695	8530-ZZZ	#1030	6451030	For 8530-E01/-001. Requires fixed disk bay.
Personal System/2 Micro Channel SCSI Adapter External Terminator	$110	8550-ZZZ	#1039	6451039	60-pin terminator for #1018 when no external SCSI device is attached.
PS/2 Card-to-Option Cable	$155	8550-ZZZ	#1041	6451041	60-pin to 50-pin cable to connect external connector of #1005 to first SCSI device. 4 ft./1220 mm. Includes PS/2 Option Interface Terminator, a 50-pin terminator for the last device on the SCSI bus.
PS/2 Option-to-Option Cable	$90	8550-ZZZ	#1042	6451042	50-pin to 50-pin cable to connect one external SCSI device to another. 2 ft./610 mm.
PS/2 60MB SCSI Fixed Disk Drive	$1200	8550-ZZZ	#1049	6451049	For 856x-xxx and 8580-xxx. Limit 2 per system on 85x0-0xx and 8580-x11; 3 per system on all other supported models. Feature #1053 required for second drive. Mix with #1050 and #1055 OK.
PS/2 120MB SCSI Fixed Disk Drive	$1920	8550-ZZZ	#1050	6451050	For 856x-xxx and 8580-xxx. Limit 2 per system on 85x0-0xx and 8580-x11; 3 per system on all other supported models. Feature #1053 required for second drive. Mix with #1049 and #1055 OK.
PS/2 SCSI Fixed Disk Drive Kit A	$90	8550-ZZZ	#1053	6451053	Required with second #1049, #1050, or #1055 installed.
PS/2 320MB SCSI Fixed Disk Drive	$5500	8550-ZZZ	#1055	6451055	For 856x-xxx and 8580-xxx. Limit 2 per system on 85x0-0xx and 8580-x11; 3 per system on all other supported models. Feature #1053 required for second drive. Mix with #1049 and #1050 OK.
IBM PS/2 Fixed Disk Drive Kit A	$65	8530-ZZZ	#1071	6451071	For #1075 or #1076.
IBM PS/2 20MB Fixed Disk Drive I	$787	8530-ZZZ	#1075	6451075	For 8525-xx6. Requires #1071.
IBM PS/2 30MB Fixed Disk Drive I	$695	8530-ZZZ	#1076	6451076	For 8525-xx6. Requires #1071.
IBM Personal System/2 44MB Fixed Disk Drive	$1500	8550-ZZZ	#3046	6450354	For 85x0-041. Requires available fixed disk bay.
IBM Personal System/2 70MB Fixed Disk Drive	$2580	8550-ZZZ	#3051	6450355	For 85x0-071 and 8580-111. Requires available fixed disk bay.
20MB Fixed Drive	$818	8530-ZZZ	#4107	78X8958	For 8525-xxx. No slot required; limit one per system. Includes integrated disk drive/controller with key-locked bezel.
Personal System/2 20MB Fixed Disk Drive with Adapter†	N/A†	8530-ZZZ	#4110	27F4130	For 8525-xxx. Requires 1 half-size slot. Includes key-locked bezel and adapter. Replaced by #4107.
Personal System/2 20MB Fixed Disk Drive	$787	8530-ZZZ	#4115	6451031	For 8530-x01. Limit one per system.
IBM Personal System/2 314MB Fixed Disk Drive	$6805	8550-ZZZ	#6023	6450381	For 8580-071/-x11. Requires available fixed disk bay.
IBM Personal System/2 60MB Fixed Disk Drive	$1745	8550-ZZZ	#6666	6450606	For 8550-021/-031. Requires replacement of currently installed fixed disk and controller adapter. Includes new controller adapter.
IBM Personal System/2 115MB Fixed Disk Drive	$3765	8550-ZZZ	#8730	6450377	For 85x0-071 and 8580-111. Requires available fixed disk bay.

Table 2-G. Other Storage Products

Feature Name	Suggested Retail Price	Product Number / Ordering Vehicle	Feature Number	Part Number	Notes
3363 External Optical Disk Drive[1] (A01)	$3340	3363-A01	-	63X4131	For 8525-xxx and 8530-xxx. One slot required; includes adapter and DOS drivers. Use 3363-B01 to attach 2nd drive.
3363 External Optical Disk Drive[1] (A11)	$3340	3363-A11	-	68X7946	For all Micro Channel PS/2 systems. One slot required; includes adapter and DOS drivers. Use 3363-B01 to attach 2nd drive.
3363 External Optical Disk Drive[1] (B01)	$2675	3363-B01	-	63X4182	For any PS/2 system with an odd number of pre-existing 3363 drives. No adapter included; attaches to adapter accompanying 3363-A01/-A11 or #8700.
PS/2 External CD-ROM Drive	$1550	3510-001	-	3510001	For 8565-xxx, 8580-Axx/-121/-321, #1005, or #1018. Requires #1041. Second or subsequent drives require #1042.
6157 Streaming Tape Drive (60MB)	$1935	6157-001	-	6157001	Requires #4156 for 8525-xxx and 8530-xxx. Requires #4160 for any Micro Channel PS/2.
6157 Streaming Tape Drive (150MB)	$2155	6157-002	-	6157002	Requires #4156 for 8525-xxx and 8530-xxx. Requires #4160 for any Micro Channel PS/2.
IBM Personal System/2 CD-ROM Drive	$1250	8550-ZZZ	#0845	6450845	For 8565-xxx, 8580-Axx/-121/-321, #1005, or #1018. Requires #0847.
IBM Personal System/2 CD-ROM Drive Kit A	$35	8550-ZZZ	#0847	6450847	For #0845. Includes bezel, cable, and installation instructions.
Personal System/2 Micro Channel SCSI Adapter	$495	8550-ZZZ	#1005	6451005	16-bit bus-master adapter for all Micro Channel PS/2 systems. One 16-bit or 32-bit slot required.
Personal System/2 Micro Channel SCSI Adapter w/Cache	$995	8550-ZZZ	#1018	6451018	32-bit bus-master adapter for all Micro Channel PS/2 systems. One 16-bit or 32-bit slot required. Feature #1039 is required when no external SCSI device is attached.
Personal System/2 Micro Channel SCSI Adapter External Terminator	$110	8550-ZZZ	#1039	6451039	60-pin terminator for #1018 when no external SCSI device is attached.
PS/2 Card-to-Option Cable	$155	8550-ZZZ	#1041	6451041	60-pin to 50-pin cable to connect external connector of #1005 to first SCSI device. 4 ft./1220 mm. Includes PS/2 Option Interface Terminator, a 50-pin terminator for the last device on the SCSI bus.
PS/2 Option-to-Option Cable	$90	8550-ZZZ	#1042	6451042	50-pin to 50-pin cable to connect one external SCSI device to another. 2 ft./610 mm.
IBM PS/2 Internal Tape Backup Unit Convenience Kit (OS/2 Version)	$920	8550-ZZZ	#1190	30F5272	For 8550-xxx, 856x-xxx, 8570-xxx, and 8580-xxx. Requires available diskette bay. 8565-xxx, 8580-Axx, and 8580-x2x also require #2990. Includes #5279, the IBM PS/2 Internal Tape Backup Program (OS/2 Version, PN 34F3046), and a pre-formatted mini tape cartridge.
IBM PS/2 Internal Tape Backup Unit Installation Kit A	$35	8550-ZZZ	#2990	34F2990	For #1190, #5279, or #5280 in 856x-xxx, 8580-Axx, or 8580-x2x.
6157 Streaming Tape Drive Adapter	$376	8530-ZZZ	#4156	59X4146	For 8525-xxx and 8530-xxx. Requires one slot and SY-TOS Tape Utilities (PN 37F6334).
6157 Streaming Tape Drive Adapter	$376	8550-ZZZ	#4160	92X1458	For all Micro Channel PS/2 systems. Requires one slot and SY-TOS Tape Utilities (PN 37F6334).
IBM PS/2 Internal Tape Backup Unit	$765	8550-ZZZ	#5279	30F5279	For 8550-xxx, 856x-xxx, 8570-xxx, and 8580-xxx. Requires available diskette bay and IBM PS/2 Internal Tape Backup Program (OS/2 Version, PN 34F3046 or DOS Version, PN 30F5278). 8565-xxx, 8580-Axx, and 8580-x2x also require #2990.
IBM PS/2 Internal Tape Backup Unit Convenience Kit (DOS Version)	$895	8550-ZZZ	#5280	30F5280	For 8550-xxx, 856x-xxx, 8570-xxx, and 8580-xxx. Requires available diskette bay. 8565-xxx, 8580-Axx, and 8580-x2x also require #2990. Includes #5279 and IBM PS/2 Internal Tape Backup Program (DOS Version, PN 30F5278), and a pre-formatted mini tape cartridge.
3363 Internal Optical Disk Drive[1]	$2905	8550-ZZZ	#8700	63X4166	For 856x-xxx and 858x-xxx. One slot required; includes adapter and DOS drivers. Requires available fixed disk drive bay. Use 3363-B01 to attach 2nd drive.

NOTES:

[1] Not accessible over LAN or under OS/2.

Table 2-H. Printer Features

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes
4019-E01 Upgrade Option	$1099	8550-ZZZ	#0121	-	To upgrade 4019-E01 to 4019-001.
Serial Parallel Adapter	$161	8530-ZZZ	#0215	6450215	9-pin connectors.
IBM Serial Adapter Cable	$70	8530-ZZZ	#0217	6450217	10-foot (3 meter) cable with 9-pin D-shell/25-pin D-Shell EIA RS-232-C interface.
Personal PagePrinter SheetFeeder	$1395	4216-ZZZ	#1000	01F1000	For 4216-031.
Serial Interface Card	$103	8550-ZZZ	#3000	6493187	For 4201-002 or 4202-002. Requires serial cable #6031.
Cable: Serial 3812 to PC, 6-meter	$90	3812-002	#3030	1348421	For 3812-002.
Cable: Serial 3812 to PC, 24-meter	$136	3812-002	#3040	1348423	For 3812-002.
Printer Stand	$374	3812-002	#3050	1348481	For 3812-002.
Printer Stand	$374	3816-01x	#3050	04F5325	For 3816-xxx.
RS-232/RS-422 Serial Card	$119	8550-ZZZ	#3050	23F4395	For 4201-003, 4202-003, 4207-002, 4208-002.
PC Sharing Card	$570	3812-002	#3115	1348408	To allow up to 8 PS/2s to share 3812-002. Use driver program #9623.
8KB Print Buffer	$36	8550-ZZZ	#4000	4783791	For 4201-002, 4202-002.
32KB Print Buffer	$55	4201-ZZZ	#4003	23F4190	For 4201-003, 4202-003.
2MB Memory Expansion	$1495	4216-ZZZ	#4545	32F9545	For 4216-031. Increases memory for font cache.
Single Bin Cut Sheetfeed (4201, 4207)	$208	8530-ZZZ	#4927	-	For 4201-003, 4207-002. 100 sheets/20lb. 5.5"-8.5".
Single Bin Cut Sheetfeed (4202, 4208)	$260	8530-ZZZ	#4928	-	For 4202-003, 4208-002. 100 sheets/20lb. 5.5"-14.33".
PC Parallel Printer Adapter	$18	8530-ZZZ	#5200	1505200	For 4201-002.
Model 030 Upgrade Kit	$750	4216-ZZZ	#5202	26F5202	To upgrade 4216-030 to 4216-031. Includes pluggable modules, labels, and Guide to Operations. Requires NSD or dealer installation, included in price.
Parallel Printer Cable	$47	8530-ZZZ	#5612	1525612	For any IBM printer with parallel interface.
Printer Stand	$48	8530-ZZZ	#5614	1525614	For 8" form-feed printers.
Serial Printer Attach Cable, 20-foot	$47	8530-ZZZ	#6031	8509386	For 4201-xxx, 4202-xxx, 4207-002, 4208-002, 4019-xxx. 25-pin cable.
Serial Interface Cable, 20-foot.	$60	8530-ZZZ	#6685	-	For 5204-001 or 4019-xxx. 25-pin cable.
Adjustable Single Bin Sheetfeed	$349	5204-001	#7000	-	For 5202-001, 5204-001. No adapter required.
High-Capacity Paper Input	$1470	3816-01x	#7640	19F7640	For 3816-xxx. 1200 sheet capacity.
High-Capacity Paper Output	$1470	3816-01x	#7650	-	For 3816-xxx. 1500 sheet capacity.
PC Attachment	$519	3816-01x	#7651	19F7651	For 3816-xxx. Attaches via serial port.
PinWheel Forms Feed	$112	8530-ZZZ	#7820	1341091	For 5201-002.
Sheetfeed	$379	8530-ZZZ	#7840	6373100	For 5201-002.
PostScript Option	$499	8550-ZZZ	#8076	1038076	For 4019-xxx. Includes 17 resident fonts.
Dual Drawer Sheetfeed	$849	5204-001	#8077	1508077	For 5201-001, 5204-001.
PostScript Option; Premium Font Package	$899	8550-ZZZ	#8086	1038086	For 4019-xxx. Includes both #8077 & #8100.
Outline Font Card	$699	8550-ZZZ	#8100	1038100	For 4019-xxx. Includes 22 outline fonts.
PinWheel Forms Feed	$107	8530-ZZZ	#8214	-	For 5201-001.
3.5MB Memory Option	$1599	8550-ZZZ	#8675	1038675	For 4019-xxx.
Serial Printer Attach Cable, 50-foot	$99	8550-ZZZ	#8693	1038693	For 4019-xxx. 25-pin to 25-pin required for each PS/2.
Printer Sharing Option, up to 6 PCs	$489	8550-ZZZ	#8958	1038958	For 4019-xxx. Requires parallel cable.
PinWheel Forms Feed	$134	5204-001	#9018	-	For 5204-001. Auto-feed. Paper size 2.5"-14.5".
1MB Memory Option	$449	8550-ZZZ	#9136	1039136	For 4019-xxx.
2MB Memory Option	$899	8550-ZZZ	#9137	1039137	For 4019-xxx.
32KB Print Buffer	$78	5204-001	#9391	-	For 5204-001. Increases standard 8KB buffer to 40KB buffer.
200 Sheet Paper Tray (Letter Size)	$59	8550-ZZZ	#9440	1039440	For 4019-xxx.
500 Sheet Paper Tray (Letter Size)	$89	8550-ZZZ	#9450	1039450	For 4019-xxx. Inserts into 500 sheet 2nd input drawer.
500 Sheet Second Drawer	$399	8550-ZZZ	#9530	1039530	For 4019-xxx. Letter size.
200 Sheet Paper Tray (Legal Size)	$69	8550-ZZZ	#9570	1039570	For 4019-xxx. Replaces standard letter size.
500 Sheet Paper Tray (Legal Size)	$99	8550-ZZZ	#9590	1039590	For 4019-xxx. Inserts into 500 sheet 2nd input drawer.
Auto Envelope Feeder	$329	8550-ZZZ	#9606	1039606	For 4019-xxx. 75 envelope capacity.
Dual Drawer Envelope Feeder	$322	5204-001	#9620	-	For 5202-001, 5204-001. Requires #8077.
PC/DOS PagePrinter Driver Program	$49	5871-BBB	#9623	6466981	Required on each PC to share the 3812.

Table 2-I. Plotter Features

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes
Serial Adapter Cable	$70	8530-ZZZ	#0217	6450217	10-foot cable for 7372-001, 7374-001, 7375-xxx†. 9-pin.
Serial Adapter Connector	$37	8530-ZZZ	#0242	6450242	10-inch connector for 6187-xxx, 7375-xxx†. 9-pin to 25-pin.
Serial Printer Cable	$67	6150-ZZZ	#4803	6024803	For 6187-xxx. 10-pin.
Graphics Enhancement Cartridge	$150	6180-ZZZ	#5010	5452389	For 6180-xxx. Increases buffer to 1KB.
1-MEG Buffer Expansion Unit	$1066	6185-ZZZ	#5011	5472914	For 6185-xxx.
2-MEG Buffer Expansion Unit	$1780	6185-ZZZ	#5012	5472915	For 6185-xxx.
EIA-232-D Cable	$51	6182-001	#5020	-	10-foot cable for 6182-xxx, 6184-xxx, 6185-xxx, 6186-xxx†, 6187-xxx, 7372-xxx, 7374-xxx, 7375-xxx†.
RT PC Cable Adapter	$16	6182-001	#5030	-	For 6182-xxx.
EIA-232-D Cable	$5	6184-001	#5030	5458877	6-foot cable for 6184-xxx, 6185-xxx, 6186-xxx†, 6187-xxx, 7372-xxx, 7374-xxx, 7375-xxx†.
IEEE 488 Cable	$102	6182-ZZZ	#5040	-	10-foot cable for 6182-xxx.
IEEE 488 Cable	$102	8550-ZZZ	#5040	5452378	10-foot cable for 6184-xxx, 6185-xxx, 6186-xxx†, 6187-xxx, 7372-xxx, 7374-xxx, 7375-xxx†.
RS-232-C Cable	$51	6180-001	#5050	5458877	For 6180-xxx.
IEEE 488 Support Microcode Cartridge	$295	6184-001	#5050	-	For 6184-001, 6185-xxx. Requires #5040.
Overhead Transparency Kit	$120	6182-ZZZ	#5060	-	For 6182-001.
6185-001 Drafting Supplies Kit	$304	6185-ZZZ	#5061	5472932	For 6185-001.
6187 Drafting Supplies Kit	$351	6187-ZZZ	#5061	-	For 6187-xxx.
6185-002 Drafting Supplies Kit	$351	6185-ZZZ	#5062	5472933	For 6185-002.
6187 Architectural Supplies Kit	$368	6187-ZZZ	#5062	-	For 6187-xxx.
6185-001 Architectural Supplies	$312	6185-ZZZ	#5063	5472582	For 6185-001.
6185-002 Architectural Supplies	$368	6185-ZZZ	#5064	5472583	For 6185-002.
RS-232 Attachment Specify	$0	7371-001	#9910	-	For 7372-001.
IEEE 488 Attachment Specify	$0	7371-001	#9920	-	For 7372-001.
Hardware Specify	$0	7371-001	#9930	-	For 7372-001.

Table 2-J. Scanner Features

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes
Serial/Parallel Adapter	$161	8530-ZZZ	#0215	6450215	For 8525-xxx and 8530-xxx. Uses #0217.
Serial Adapter Cable	$70	8530-ZZZ	#0217	6450217	For 3117 w/#4555 and #0215 or #1028; or 3118 w/#0215 or #1028.
High Speed Adapter/A	$318	8550-ZZZ	#1028	65X1905	For any Micro Channel PS/2. Requires #0217 to attach 3117 w/#4555 or 3118.
3117 Scanner Adapter/A	$301	8550-ZZZ	#1029	65X1925	For any Micro Channel PS/2. Requires #3005 to attach 3117.
Communication Attach Cable	$70	8530-ZZZ	#2067	1052067	For 3117 w/#4555 and #2074 or #4920; or 3118 w/#2074 or #4920.
Asynch Adapter	$73	8530-ZZZ	#2074	1502074	For 8530-xxx and 8525-xxx. Attach #4555.
Personal Computer Cable	$73	3117-ZZZ	#3005	6456807	For 3117 w/#4925 or #1029, or 3119 w/#5442.
3117 Extension Unit	$638	3117-ZZZ	#4555	6456808	For 3117. Requires #2074/#2067, #0215/#0217, #4920/#2067, or #1028/#0217.
High Speed Adapter	$318	8530-ZZZ	#4920	65X2016	For 8525-xxx, 8530-xxx. Requires #2067 to attach 3117 w/#4555 or 3118.
3117 Scanner Adapter	$258	8530-ZZZ	#4925	65X2017	For 8525-xxx, 8530-xxx. Requires #3005 to attach 3117.
3119 Adapter/A	$950	8550-ZZZ	#5442	94X2415	For any Micro Channel PS/2. Requires #3005 to attach 3119.

Table 2-K. Communications and Connectivity Features

Please consult with your IBM marketing personnel or an IBM Authorized Dealer for additional details concerning the wide range of connectivity scenarios and solutions available to meet your specific networking and communications requirements.

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes
Serial/Parallel Adapter	$161	8530-ZZZ	#0215	6450215	For 8525-xxx and 8530-xxx. Uses #0217, #0242, or #5612.
Serial Adapter Cable	$70	8530-ZZZ	#0217	6450217	10-foot (3 meter) cable with 9-pin D-shell/25-pin D-Shell EIA RS-232-C interface.
Serial Adapter Connector	$37	8530-ZZZ	#0242	6450242	10" cable with a 9-pin D-shell/25-pin D-shell EIA RS-232-C interface.
IBM Personal System/2 300/1200 Internal Modem/A	$425	8550-ZZZ	#0349	6450349	For all Micro Channel PS/2 systems. Requires one slot. AT-command set compatible.
IBM Personal System/2 Dual Async Adapter/A	$231	8550-ZZZ	#1014	6451013	For all Micro Channel PS/2 systems. Limit 3 per system.
Binary Synchronous Communications (BSC) Adapter	$258	8530-ZZZ	#1204	1501204	For 8525-xxx and 8530-0xx. Limit two per system; limit one if an SDLC Adapter is installed. Requires one expansion slot. Uses #2067.
SDLC Communications Adapter	$258	8530-ZZZ	#1205	1501205	For 8525-xxx and 8530-xxx. Limit one per system. Requires one expansion slot. Uses #2067.
IBM Personal System/2 300/1200/2400 Internal Modem/A	$462	8550-ZZZ	#1755	94X1755	For all Micro Channel PS/2 systems. Requires one half-size slot. AT-command set compatible.
IBM PS/2 Leased Line Modem	$3435	8550-ZZZ	#1862	26F1862	For #3043 (DOS 3.3 or 4.0) or #6263 (OS/2--requires RTIC OS/2 Support program). Includes cables.
IBM 3270 Connection for Personal System/2	$642	8550-ZZZ	#2000	25F8448	For all Micro Channel PS/2 systems. Requires one half-size slot.
Communications Adapter Cable	$70	8530-ZZZ	#2067	1502067	For #1204, #1205, #3043, #1014 and other communications connections. Includes wrap connector and 10-foot (3 meter) cable with 25-pin D-shell connectors on both ends for EIA RS-232-C interface.
Integrated Attachment Cable	$96	8530-ZZZ	#2877	6403635	For #2911.
Enhanced 5250 Display Station Emulation Adapter Kit	$641	8530-ZZZ	#2911	30F5383	For 8530-xxx. Requires the Enhanced 5250 Emulation Program Version 2.12, #2877, and one slot.
IBM Personal System/2 Multi-Protocol Adapter/A	$350	8550-ZZZ	#3043	6451003	For all Micro Channel PS/2 systems. Requires one slot.
System/370 Channel Emulator	$2635	8530-ZZZ	#3200	70X5061	For 8530-0xx. Includes adapter (#3201), cable (#3202), and documentation (#3203).
System/370 Channel Emulator Adapter	$1915	8530-ZZZ	#3201	70X5061	For 8530-xxx. Adapter only.
Cable for System/370 Channel Emulator	$653	8530-ZZZ	#3202	70X4865	For #3201. Cable only.
Technical Library for System/370 Channel Emulator	$70	8530-ZZZ	#3203	6476158	For #3201. Documentation only.
IBM S/370 Channel Emulator/A	$3090	8550-ZZZ	#3205	1674899	For all Micro Channel PS/2 systems. Requires one slot with rear access for cable attachment. Includes adapter (#3206), cable (#3202), and documentation (#3207).
Card Assembly	$2300	8550-ZZZ	#3206	-	For all Micro Channel PS/2 systems. Adapter only.
Technical Library	$68	8550-ZZZ	#3207	06F3225	For #3206. Documentation only.
Advanced IBM PC 3278/79 Emulation Adapter	$642	8530-ZZZ	#5050	25F8459	For 8525-xxx and 8530-xxx. Requires one half-size slot. Limit one per system. May not be installed concurrently with the Speech Adapter, #5002 (see Table 2-P on page 18).
Parallel Printer Cable	$47	8530-ZZZ	#5612	1525612	For any IBM printer with parallel interface.
Enhanced 5250 Emulation Adapter and Cable Kit for AS/400	$737	8530-xxx	#5622	30F5622	For 8530-xxx. Includes #2911, #2877 and Guide to Operations.
IBM System 36/38 Workstation Emulation Adapter/A and Attachment	$668	8550-ZZZ	#6279	69X6279	For 855x-xxx, 856x-xxx, 8570-xxx, and 8580-xxx. Uses #6293. Requires one slot.
IBM System 36/38 Workstation Emulation Attachment Cable	$70	8550-ZZZ	#6293	69X6293	For #6279.
Cable Option, X.21	$103	8550-ZZZ	#6321	16F1865	For #6401.
Cable Option, X.24	$103	8550-ZZZ	#6322	16F1869	For #6401.
Cable Option, X.35	$190	8550-ZZZ	#6323	16F1871	For #6401.
IBM X.25 Interface Co-Processor/2	$1230	8550-ZZZ	#6401	16F1858	For all Micro Channel PS/2 systems. Uses #6321, #6322, or #6323. Requires one slot.
IBM Display Station Emulation Attachment Cable	$72	8550-ZZZ	#7742	92X0742	For #7743.
IBM Display Station Emulation Adapter/A	$676	8550-ZZZ	#7743	92X0743	For all Micro Channel PS/2 systems. Requires one slot, #7742, and the 5520 PS/2 Attachment Program.
Ungermann-Bass NICps/2 Adapter 1542	$550	8550-ZZZ	#8000	1327050	Ethernet adapter for 8550-xxx, 8560-xxx, and 8580-xxx.

Table 2-L. Realtime Interface Co-Processor (ARTIC) and Options

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes
CCITT V.35 Interface Board	$226	8530-ZZZ	#6053	67X1256	For #6165, #6166, and #6241. Adapts one of the Co-Processor's serial ports for compatibility with CCITT V.35 interfaces.
128KB Memory Expansion Option	$108	8530-ZZZ	#6055	-	For #6165.
EIA RS-232-C Direct Attach Interface Cable Option	$108	8530-ZZZ	#6056	67X1244	For #6165, #6166, or #6241. Allows the user to connect one port of the Realtime Interface Co-Processor directly to other devices without using a modem.
EIA RS-232-C Modem Attach Interface Cable	$123	8530-ZZZ	#6057	67X1246	For #6165, #6166, or #6241. Allows the user to connect one port of the Realtime Interface Co-Processor to a modem.
CCITT V.35 Interface Cable	$216	8530-ZZZ	#6061	67X1248	For #6165, #6166, or #6241. Allows the user to connect one port of the Realtime Interface Co-Processor to a CCITT V.35 modem.
20ma Current Loop Interface Board	$173	8530-ZZZ	#6066	-	Adapts one of the Co-Processor's serial ports for compatibility with 20ma interfaces.
512KB Memory Expansion Option	$307	8530-ZZZ	#6161	76X1019	For #6166.
Realtime Interface Co-Processor	$1080	8530-ZZZ	#6165	-	For 8530-xxx. Requires one slot. Includes 2 ports, 128KB upgradeable to 256KB, and Control Program on 3.5" diskettes.
Realtime Interface Co-Processor	$1335	8530-ZZZ	#6166	85X2706	For 8530-xxx. Requires one slot. Includes 2 ports, 512KB upgradeable to 1MB, and Control Program on 3.5" diskettes.
Realtime Interface Co-Processor Multiport	$1140	8530-ZZZ	#6240	00F5525	For 8530-xxx. Requires one slot. Uses #6246, #6242, #6243, and #6245. Includes 4 ports, 128KB, and Control Program on 5.25" diskettes.
Realtime Interface Co-Processor Multiport	$1140	8530-ZZZ	#6241	00F5527	For 8530-xxx. Requires one slot. Uses #6246, #6242, #6243, and #6245. Includes 4 ports, 128KB, and Control Program on 3.5" diskettes.
Realtime Interface Co-Processor 512KB Memory Expansion	$307	8530-ZZZ	#6242	00F5529	For #6241. Replaces base 128KB with 512KB.
IBM Four-Port Addition	$237	8530-ZZZ	#6243	09F1989	For #6241. Adds 4 RS-422 serial I/O ports.
Realtime Interface Co-Processor Multiport Four Port Addition	$194	8530-ZZZ	#6245	00F5530	For #6241. Adds 4 EIA RS-232-C/CCITT V.24 serial I/O ports. Limit one addition per adapter.
Multiport Interface Cable	$226	8530-ZZZ	#6246	00F5531	For #6241, #6265, #6266, #6267, or #6326.
IBM Realtime Interface Co-Processor Multiport/2, 1MB	$1435	8550-ZZZ	#6247	16F1820	For all Micro Channel PS/2 systems. Requires one slot.
IBM Realtime Interface Co-Processor (ARTIC) Multiport/2	$1055	8550-ZZZ	#6263	09F1897	For all Micro Channel PS/2 systems. Requires one slot.
Eight Port RS-232-C Interface Board	$333	8550-ZZZ	#6265	09F1952	For #6263 and #6247. Uses #6246. External connector which provides 8 RS-232/V.24 serial I/O ports.
RS-232-C/RS-422-A Interface Board	$361	8550-ZZZ	#6266	09F1958	For #6263 and #6247. Uses #6246. Provides four EIA RS-232-C/CCITT V.24 serial I/O ports and four EIA RS-422-A serial ports.
Four Port RS-232-C Interface Board	$253	8550-ZZZ	#6267	09F1955	For #6263 and #6247. Uses #6246. External connector which provides 4 EIA RS-232-C/CCITT V.24 serial I/O ports.
Eight-Port RS-422-A Interface Board	$432	85xx-ZZZ[1]	#6326	15F8852	For #6247 and #6263. Uses #6246. External connector which provides 8 RS-422-A ports.
Six Port RS-232-C Synchronous Interface Board	$329	85xx-ZZZ[1]	#6327	15F8861	For #6247 and #6263.
Synchronous Interface Cable	$257	85xx-ZZZ[1]	#6328	15F8866	For #6327. Includes wrap connector.
Realtime Interface Co-Processor Portmaster Adapter/A, 512KB	$1400	8550-ZZZ	#6360	53F2601	Bus-master adapter for all Micro Channel PS/2 systems. Requires one slot. Uses #6361, #6362, #6363, and #6366.
Surge Protection Adapter	$113	8550-ZZZ	#6361	53F2625	For Portmaster adapter (#6360, #6364, or #6368) with #6363 and #6366. Limit 8 per Eight Port Cable (#6366).
Eight Port RS-232 Interface Board/A	$417	8550-ZZZ	#6362	53F2610	For Portmaster adapter #6360, #6364, or #6368. Limit one per adapter.
Eight Port RS-422 Interface Board/A	$463	8550-ZZZ	#6363	53F2613	For Portmaster adapter #6360, #6364, or #6368. Limit one per adapter.
Realtime Interface Co-Processor Portmaster Adapter/A, 1MB	$1750	8550-ZZZ	#6364	53F2604	Bus-master adapter for all Micro Channel PS/2 systems. Requires one slot. Uses #6361, #6362, #6363, and #6366.
Eight Port Cable	$329	8550-ZZZ	#6366	53F2619	For Portmaster Adapter (#6360, #6364, or #6368) w/Eight Port Interface Board (#6362 or #6363). Limit one per interface board.
Realtime Interface Co-Processor Portmaster Adapter/A, 2MB	$2265	8550-ZZZ	#6368	53F2607	Bus-master adapter for all Micro Channel PS/2 systems. Requires one slot. Uses #6361, #6362, #6363, and #6366.
Realtime Interface Co-Processor Multiport Adapter Model 2, 1MB	$1695	8530-ZZZ	#6390	33F8791	For 8530-xxx. Requires one slot.

NOTES:

[1] Use machine ordering vehicle when ordering this part.

Table 2-M. Token-Ring Network Products

Feature Name	Suggested Retail Price	Product Number / Ordering Vehicle	Feature Number	Part Number	Notes
Token-Ring Network Copper Repeater	$1825	8218-001	-	6339532	Extends drive distance to 750 meters between 8228s.
Token-Ring Network Optical Fiber Repeater	$2475	8219-001	-	6339535	Extends drive distance to 2km between 8228s.
Token-Ring Network Optical Fiber Converter	$3090	8220-001	-	96X5810	Converts electrical to optical or optical to electrical signals on the Token-Ring Network.
Multistation Access Unit	$748	8228-001	-	6091014	For #3390; connects as many as 8 network stations and to other 8228s.
IBM Token-Ring Network 16/4 Adapter/A	$921	8550-ZZZ	#1133	16F1133	For all Micro Channel PS/2 systems. Requires #3390 and one slot. 16Mbps.
IBM Token-Ring Network PS/2 Model P70 386 Adapter/A	$825	8550-ZZZ	#1598	39F9598	For 8573-xxx. Requires #3390 and one half-size slot. Includes L-angle connector and short cable. 4Mbps.
Rack Mounting Assembly	$324	8218-001	#3001	6339139	For 8218-001 or 8219-001.
Surface Mounting Brackets	$21	8218-001	#3002	6339140	For 8218-001 or 8219-001.
IBM Token-Ring PC Adapter Cable	$36	8550-ZZZ	#3390	6339098	For #1133, #4790, #7367, or #9858. Requires 8228-001.
IBM Token-Ring Network Adapter/A for Personal System/2	$772	8550-ZZZ	#4790	69X8138	For all Micro Channel PS/2 systems. Requires #3390 and one slot. 4Mbps.
Token-Ring Network 16/4 Trace and Performance Adapter	$1220	8530-ZZZ	#5121	74F5121	For 8525-xxx and 8530-xxx. Requires #3390 and one slot. 16Mbps.
Token-Ring Network 16/4 Trace and Performance Adapter	$1220	8550-ZZZ	#5130	74F5130	For all Micro Channel PS/2 systems. Requires #3390 and one slot. 16Mbps.
IBM Token-Ring Network Trace and Performance PC Adapter II†	N/A†	8530-ZZZ	#5773†	96X5773	For 8530-xxx. Requires Token-Ring Trace and Performance Program. 4Mbps.
IBM Token-Ring Network Trace and Performance PC Adapter/A†	N/A†	8550-ZZZ	#5774†	96X5774	For All Micro Channel PS/2 systems. Requires Token-Ring Trace and Performance Program. 4Mbps.
IBM Token-Ring Network 16/4 Adapter	$921	8530-ZZZ	#7367	25F7367	For 8525-xxx and 8530-xxx. Requires #3390 and one slot. 16Mbps.
IBM Token-Ring Network Remote Program Load	$96	8530-ZZZ	#7839	83X7839	For #9858. 24-pin module.
Remote Program Load for Token-Ring Network Adapter/A	$96	8550-ZZZ	#8881	25F8887	For #1133, #7367, or #4790 (except w/8573-xxx). 28-pin module.
IBM Token-Ring Network PC Adapter II	$669	8530-ZZZ	#9858	25F9858	For 8525-xxx and 8530-xxx. Requires #3390 and one slot. 4Mbps.

Table 2-N. PC Network Broadband Products

Feature Name	Suggested Retail Price	Product Number / Ordering Vehicle	Feature Number	Part Number	Notes
PC Translator Unit	$674	5178-001	-	5178001	Frequency translator. One required per each PC Network (broadband). Requires #0238.
PC Network Base Expander Unit	$62	8530-ZZZ	#0230	6450230	For 5178-001. Attach up to eight of #0231, #0232, or #0233 in order to extend the distance between network stations (systems) and the 5178 Translator Unit.
PC Network Short Distance Kit	$41	8530-ZZZ	#0231	6450231	For #0230. Uses #0234, #0235, #0236, or #0237. 100 ft. of cable to attach #0230 to network adapter.
PC Network Medium Distance Kit	$84	8530-ZZZ	#0232	6450232	For #0230. Uses #0234, #0235, #0236, or #0237. 400 ft. of cable to attach #0230 to network adapter.
PC Network Long Distance Kit	$95	8530-ZZZ	#0233	6450233	For #0230. Uses #0234, #0235, #0236, or #0237. 800 ft. of cable to attach #0230 to network adapter.
PC Network 25-Foot Cabling Segment	$30	8530-ZZZ	#0234	6450234	For #0231, #0232, or #0234. To extend the distance between network station and 5178 Translator Unit.
PC Network 50-Foot Cabling Segment	$41	8530-ZZZ	#0235	6450235	For #0231, #0232, or #0234. To extend the distance between network station and 5178 Translator Unit.
PC Network 100-Foot Cabling Segment	$62	8530-ZZZ	#0236	6450236	For #0231, #0232, or #0234. To extend the distance between network station and 5178 Translator Unit.
PC Network 200-Foot Cabling Segment	$106	8530-ZZZ	#0237	6450237	For #0231, #0232, or #0234. To extend the distance between network station and 5178 Translator Unit.
PC Network Transformer Unit (120V)	N/C	5178-001	#0238	6450238	For 5178-001.
IBM PC Network Broadband Adapter II	$614	8530-ZZZ	#1220	1501220	For 8525-xxx and 8530-xxx. Limit one per system. Includes 9-ft. coax cable. Requires one half-size slot and LAN Support Program or PC Network Protocol Driver.
IBM PC Network Broadband Adapter II/A	$614	8550-ZZZ	#1222	1501222	For all Micro Channel PS/2 systems. Limit one per system. Includes 9-ft. coax cable. Requires one slot and LAN Support Program or PC Network Protocol Driver.
IBM PC Network Adapter II-Frequency 2	$614	8530-ZZZ	#5645	96X5645	For 8525-xxx and 8530-0xx. Limit one per system. Supports broadband channels 2 and 0. Includes 9-ft. coax cable. Requires one half-size slot and LAN Support Program.
IBM PC Network Adapter II-Frequency 3	$614	8530-ZZZ	#5646	96X5646	For 8525-xxx and 8530-0xx. Limit one per system. Supports broadband channels 3 and P. Includes 9-ft. coax cable. Requires one half-size slot and LAN Support Program.
IBM PC Network Adapter II/A-Frequency 2	$614	8550-ZZZ	#5647	96X5647	For all Micro Channel PS/2 systems. Limit one per system. Supports broadband channels 2 and 0. Includes 9-ft. coax cable. Requires LAN Support Program.
IBM PC Network Adapter II/A-Frequency 3	$614	8550-ZZZ	#5648	96X5648	For all Micro Channel PS/2 systems. Limit one per system. Supports broadband channels 3 and P. Includes 9-ft. coax cable. Requires LAN Support Program.

Table 2-O. PC Network Baseband Products

Feature Name	Suggested Retail Price	Product Number / Ordering Vehicle	Feature Number	Part Number	Notes
IBM PC Network Baseband Adapter	$303	8530-ZZZ	#1221	1501221	For 8525-xxx and 8530-xxx. Requires LAN Support Program.
IBM PC Network Baseband Adapter/A	$303	8550-ZZZ	#1223	1501223	For all PS/2 Micro Channel systems. Requires LAN Support Program.
IBM PC Network Baseband Extender Rack Mount Kit	$50	8530-ZZZ	#1226	1501226	To install 5173-001 in wiring closet.
IBM Cabling System PC Network Baseband Cable	$38	8530-ZZZ	#1227	1501227	To attach PS/2 or extender to cabling system jack. 25ft.
IBM PC Network Baseband General Purpose Cable	$32	8530-ZZZ	#1228	1501228	To attach PS/2 to non-modular telephone receptacle. 25ft.
IBM PC Network Baseband Adapter Cable	$27	8530-ZZZ	#1229	1501229	To attach PS/2s serially into daisy-chain or to Extender. 25ft.
PC Network 5173 Baseband Extender	$850	5173-001	#5173	6133339	To increase maximum number of stations on PC Network Baseband. Uses #1227 or #1229 to attach to #1221 or #1223. Uses #1226 for installation.

Table 2-P. Miscellaneous Features

Feature Name	Suggested Retail Price	Ordering Vehicle	Feature Number	Part Number	Notes
Game Control Adapter	$48	8530-ZZZ	#1300	1501300	For 8525-xxx and 8530-xxx. Attach joystick.
Data Acquisition and Control Adapter	$1050	8530-ZZZ	#1502	6451502	For 8530-0xx. Requires one expansion slot.
General Purpose Interface Bus (GPIB) Adapter*	N/A†	8530-ZZZ	#1503	6451503	For 8530-0xx. Uses #5040. IEEE-488 GPIB interface.
Data Acquisition and Control Adapter Distribution Panel	$204	8530-ZZZ	#1504	6451504	For #1502.
Audio Capture and Playback Adapter	$565	8530-ZZZ	#2783	34F2783	For 8525-xxx and 8530-xxx. Requires one slot and the IBM Audio Visual Connection Program Product.
Audio Capture and Playback Adapter/A	$565	8550-ZZZ	#2784	34F2784	For all Micro Channel PS/2 systems. Requires one slot and the IBM Audio Visual Connection Program Product.
Video Capture Adapter/A	$2250	8550-ZZZ	#2785	34F2785	For all Micro Channel PS/2 systems. Requires one slot and the IBM Audio Visual Connection Program Product.
Industrial Belting Leather Carrying Case	$350	8550-ZZZ	#3192	23F3192	For 8573-xxx.
Nylon Fisherman's Packcloth Carrying Case	$180	8550-ZZZ	#3193	23F3193	For 8573-xxx.
M-Motion Video Adapter/A	$2250	8550-ZZZ	#3487	34F3087	For all Micro Channel PS/2 Systems. Supports all existing InfoWindow® applications.
Carrying case, PS/2 Model 25	$74	8530-ZZZ	#4103	78X8954	For 8525-xxx.
Speech Adapter	$371	8530-ZZZ	#5002	1501216	For 8525-xxx and 8530-xxx.
PS/2 Data Migration Facility	$41	8530-ZZZ	#5003	1501224	Connector and 5.25" diskette to move data one way from PC to Personal System/2. Requires parallel adapter and cable, #5612 (See Table 2-K on page 14).
General Purpose Interface Bus (GPIB) Cable	$109	8530-ZZZ	#5040	63X4882	For #1503.
IBM PC Music Feature	$533	8530-ZZZ	#6011	81X8630	For 8525-xxx and 8530-xxx.
IBM Personal System/2 Mouse	$101	8550-ZZZ	#8770	6450350	For any PS/2. Attaches to integrated pointing-device port.

Table 2-Q. Operating System Software

Feature Name	Suggested Retail Price	Product Number/ Ordering Vehicle	Feature Number	Part Number	Notes
AIX PS/2 Operating System	$874	5713-AEQ	-	11F8182	See Table 1-C on page 3 for supported systems. Includes high density 3.5" diskettes and documentation. Many operating system extensions are also available. Consult your marketing representative for additional information.
IBM Operating System/2 Standard Edition Version 1.2	$340	5871-AAA	#0173	6280253	See Tables 1-B and 1-C on pages 2 and 3 for supported systems. Includes high density 3.5" diskettes and documentation. 5.25" high density diskettes are also available (Feature #0174, PN 6280253).
IBM Operating System/2 Programming Tools and Information, Version 1.2	$650	5871-AAA	#0184	6024929	For #0353 or #0354. Supports C, FORTRAN, COBOL, REXX, and MASM. Includes SAA Dialog Manager, help management, resource editors and compiler, language bindings, on-line reference, and manuals.
IBM Operating System/2 Extended Edition Version 1.2	$830	5871-AAA	#0353	15F7143	See Tables 1-B and 1-C on pages 2 and 3 for supported systems. Includes documentation, OS/2, Communications Manager, Database Manager, and REXX on high density 3.5" diskettes. 5.25" high-density diskettes are also available (Feature #0354, PN 15F7144).
Additional Licenses, IBM DOS 3.3	$110	5872-AAA	#0648	6280060	For orders of 20 or more licenses (#0957).
IBM DOS 3.3 Documentation only	$35	5876-AAA	#0650	6280224	For use with additional licenses (#0648).
Technical Reference Manual, Disk Operating System Version 3.3	$102	5871-AAA	#0956	6280059	For #0956 or #0648.
IBM Disk Operating System Version (DOS) 3.3	$137	5871-AAA	#0957	6280060	For any PC or Personal System/2. Includes both 3.5" and 5.25" diskettes.
IBM Disk Operating System Version (DOS) 4.0	$165	5871-AAA	#1419	6280256	For any Personal System/2. 3.5" diskettes. Warranted.
IBM DOS 4.0 Technical Reference Application Programming	$115	5871-AAA	#1420	6280254	For #1419. Includes both 5.25" and 3.5" diskettes, with DEBUG, LINK, EXE2BIN, etc.
IBM DOS 4.0 Command Reference	$34	5871-AAA	#1421	6280253	For #1419.
Additional Licenses, IBM DOS 4.0	$110	5872-AAA	#1423	6280273	For orders of 20 or more licenses (#1419).
IBM DOS 4.0 Documentation only	$40	5876-AAA	#1424	6280258	For use with additional licenses (#1423).

SECTION 3. Warranty and Maintenance Information

Standard Warranty and Prices for Maintenance and Warranty Upgrade

IBM provides a wide range of warranty upgrade and annual maintenance provisions to complement the standard warranty on the various PS/2 products. In the tables that follow, the standard warranty can be identified by time period in the column of the type of warranty provided. The cost to upgrade to a different warranty types for one year is also listed in the respective columns in the **Warranty and Upgrade** section. In the **Annual Maintenance** section, the cost of annual maintenance contracts are listed by maintenance contract category. Dashes indicate a warranty or maintenance type that is unavailable for the model listed.

Table 3-A. Systems

Product Name	Order Number	Warranty and Upgrade					Annual Maintenance			
		IBM On-site Repair (IOR) #9805	IBM On-site Exchange (IOE) #9876	Customer On-site Exchange (COE) #9773	Customer Carry-In Repair (CCR)	Customer Carry-In Exchange (CCE)	IBM On-site Repair (IOR) #9798	IBM On-site Exchange (IOE) #9830	Customer On-site Exchange (COE) #9824	Customer Carry-In Repair (CCR) #9821
IBM Model 25	8525-x01/x02	$40	-	-	1 year	-	$95	-	-	-
IBM Model 25	8525-x04/x05	$40	-	-	1 year	-	$110	-	-	-
IBM Model 25 286	8525-xx6	$40	-	-	1 year	-	$210	-	-	-
IBM Model 30	8530-xx1	$40	-	-	1 year	-	$190	-	-	-
IBM Model 30	8530-xx2	$40	-	-	1 year	-	$140	-	-	-
IBM Model 50	8550-xxx	$40	-	-	1 year	-	$220	-	-	-
IBM Model 55 SX	8555-xxx	$40	-	-	1 year	-	$260	-	-	-
IBM Model 60	8560-041	$40	-	-	1 year	-	$310	-	-	-
IBM Model 60	8560-071	$40	-	-	1 year	-	$345	-	-	-
IBM Model 65 SX	8565-061	$40	-	-	1 year	-	$425	-	-	-
IBM Model 65 SX	8565-121	$40	-	-	1 year	-	$475	-	-	-
IBM Model 70 386	8570-E61	$40	-	-	1 year	-	$415	-	-	-
IBM Model 70 386	8570-061/-121	$40	-	-	1 year	-	$450	-	-	-
IBM Model 70 386	8570-Axx	$40	-	-	1 year	-	$595	-	-	-
IBM Model 70 386	8570-Bxx	$40	-	-	1 year	-	$645	-	-	-
IBM Model P70	8573-xxx	$40	-	-	1 year	-	$385	-	-	-
IBM Model 80 386	8580-041	$40	-	-	1 year	-	$360	-	-	-
IBM Model 80 386	8580-071	$40	-	-	1 year	-	$425	-	-	-
IBM Model 80 386	8580-111/-121	$40	-	-	1 year	-	$500	-	-	-
IBM Model 80 386	8580-311	$40	-	-	1 year	-	$575	-	-	-
IBM Model 80 386	8580-321	$40	-	-	1 year	-	$605	-	-	-
IBM Model 80 386	8580-A21	$40	-	-	1 year	-	$675	-	-	-
IBM Model 80 386	8580-A31	$40	-	-	1 year	-	$785	-	-	-

Table 3-B. Displays

Product Name	Order Number	Warranty and Upgrade					Annual Maintenance			
		IBM On-site Repair (IOR) #9805	IBM On-site Exchange (IOE) #9876	Customer On-site Exchange (COE) #9773	Customer Carry-In Repair (CCR)	Customer Carry-In Exchange (CCE)	IBM On-site Repair (IOR) #9798	IBM On-site Exchange (IOE) #9830	Customer On-site Exchange (COE) #9824	Customer Carry-In Repair (CCR) #9821
IBM 8503 Monochrome Display	8503-001	-	$10	$10	-	1 year	-	$25	$22	-
IBM 8506 Monochrome Display	8506-001	-	$5	-	-	1 year	-	$31	$26	-
IBM 8507 Monochrome Display	8507-001	-	$10	-	-	1 year	-	$25	$15	-
IBM 8508 Color Display	8508-001	-	$7	-	-	1 year	-	$42	$35	-
IBM 8512 Color Display	8512-001	-	$10	$10	-	1 year	-	$25	$22	-
IBM 8513 Color Display	8513-001	-	$10	$10	-	1 year	-	$25	$22	-
IBM 8514 Color Display	8514-001	-	$10	$10	-	1 year	-	$48	$46	-
IBM 8515 Color Display	8515-001	-	$10	$8	-	1 year	-	$46	$44	-

Table 3-C. Storage Devices

Product Name	Order Number	Warranty and Upgrade					Annual Maintenance			
		IBM On-site Repair (IOR) #9805	IBM On-site Exchange (IOE) #9876	Customer On-site Exchange (COE) #9773	Customer Carry-In Repair (CCR)	Customer Carry-In Exchange (CCE)	IBM On-site Repair (IOR) #9798	IBM On-site Exchange (IOE) #9830	Customer On-site Exchange (COE) #9824	Customer Carry-In Repair (CCR) #9821
IBM 3363 External Optical Disk Drive	3363-A01/-A11	$12	-	-	1 year	-	$304	-	-	-
IBM 3363 External Optical Disk Drive	3363-B01	$12	-	-	1 year	-	$279	-	-	-
PS/2 External CD-ROM Drive	3510-001	$17	-	-	1 year	-	$113	-	-	-
5.25" External Diskette Drive (360KB)	4869-001	-	$19	$13	-	1 year	-	$57	$51	-
5.25" External Diskette Drive (1.2MB)	4869-002	-	$19	$13	-	1 year	-	$56	$50	-
6157 Streaming Tape Drive (60MB)	6157-001	-	$10	$2	-	1 year	-	$148	$136	-
IBM External Tape Drive (150MB)	6157-002	-	$20	$5	-	1 year	-	$216	$200	-

Table 3-D. Printers

Product Name	Order Number	Warranty and Upgrade					Annual Maintenance			
		IBM On-site Repair (IOR) #9805	IBM On-site Exchange (IOE) #9876	Customer On-site Exchange (COE) #9773	Customer Carry-In Repair (CCR)	Customer Carry-In Exchange (CCE)	IBM On-site Repair (IOR) #9798	IBM On-site Exchange (IOE) #9830	Customer On-site Exchange (COE) #9824	Customer Carry-In Repair (CCR) #9821
IBM LaserPrinter	4019-001	$80	-	-	1 year	-	$310	-	-	-
IBM LaserPrinter E	4019-E01	$80	-	-	1 year	-	$250	-	-	-
IBM ProPrinter II/III	4201-002/-003	$11	-	-	1 year	-	$51	-	-	$40
IBM ProPrinter II XL/III XL	4202-002/-003	$15	-	-	1 year	-	$66	-	-	$51
IBM ProPrinter X24	4207-001	$17	-	-	1 year	-	$108	-	-	$89
IBM ProPrinter X24E	4207-002	$20	-	-	1 year	-	$82	-	-	$61
IBM ProPrinter XL24	4208-001	$21	-	-	1 year	-	$128	-	-	$107
IBM ProPrinter XL24E	4208-002	$25	-	-	1 year	-	$97	-	-	$72
IBM Personal PagePrinter	4216-x2x	$76	-	-	1 year	-	$342	-	-	$266
IBM Personal PagePrinter II	4216-03x	$49	-	-	1 year	-	$593	-	-	$543
IBM QuietWriter	5201-002	$111	-	-	90 days	-	$227	-	-	$116
IBM QuietWriter II	5202-001	$199	-	-	90 days	-	$233	-	-	$149
IBM QuickWriter	5204-001	$66	-	-	1 year	-	$345	-	-	-

Table 3-E. Scanners

Product Name	Order Number	Warranty and Upgrade					Annual Maintenance			
		IBM On-site Repair (IOR) #9805	IBM On-site Exchange (IOE) #9876	Customer On-site Exchange (COE) #9773	Customer Carry-In Repair (CCR)	Customer Carry-In Exchange (CCE)	IBM On-site Repair (IOR) #9798	IBM On-site Exchange (IOE) #9830	Customer On-site Exchange (COE) #9824	Customer Carry-In Repair (CCR) #9821
IBM 3117 Scanner	3117-010	$10	-	-	1 year	-	$20	-	-	$10
IBM 3118 Scanner	3118-010	$37	-	-	1 year	-	$67	-	-	$30
IBM 3118 Scanner	3118-020	$74	-	-	1 year	-	$136	-	-	$62
IBM 3119 PageScanner	3119-010	$8	-	-	1 year	-	$13	-	-	-

Table 3-F. Other

Product Name	Order Number	Warranty and Upgrade					Annual Maintenance			
		IBM On-site Repair (IOR) #9805	IBM On-site Exchange (IOE) #9876	Customer On-site Exchange (COE) #9773	Customer Carry-In Repair (CCR)	Customer Carry-In Exchange (CCE)	IBM On-site Repair (IOR) #9798	IBM On-site Exchange (IOE) #9830	Customer On-site Exchange (COE) #9824	Customer Carry-In Repair (CCR) #9821
IBM PC Network Baseband Extender	5173-001	-	-	-	1 year	-	-	$122	-	-
IBM 5841 Modem	5841-001	-	$39	$6	1 year	-	-	$72	$31	$31
IBM 5853 Modem	5853-001	-	$24	-	-	1 year	-	$76	$50	-

SECTION 4. Ergonomic and Environmental Data

Supurb ergonomic design distinguishes the Personal System/2 product line. PS/2 systems are smaller, use less power, generate less heat, and make less noise than previous generation machines. These improvements make a significant contribution to reducing operating costs and increasing user productivity and satisfaction. The following information may be used for cost and/or ergonomic or comfort comparisons.

Table 4-A. System Units

System Model	Type	Dimensions Width x Depth x Height		Weight		Heat Output (BTU/hr)	Noise Output - Operating (@ station (dB)	Power Rating (Watts)[1]	Input Voltage (Vac)	Max. Current (Amps)[2]
		mm	inches	kg	lbs.					
Model 25	Integrated Desktop	241x375x383	9.5x14.7x15.1	12.7[3] 16.8[4]	28.0[3] 37.0[4]	683	51.0	200	90 - 137 180 - 265	2.0 1.7
Model 25 286	Integrated Desktop	240x375x382	9.5x14.7x15.0	16.8[3] 16.0[4]	37.0[3] 35.3[4]	654	51.0	200	90 - 137 180 - 265	2.0 1.7
Model 30	Short Desktop	406x397x102	16.0x15.6x4.0	8.0	17.5	438	37.5	70	90 - 137 180 - 265	1.5 0.75
Model 30 286	Short Desktop	406x397x102	16.0x15.6x4.0	7.8	17.2	341[5] 438	46.0	90	90 - 137 180 - 265	2.5 1.3
Model 50/50Z	Narrow Desktop	360x420x140	14.1x16.5x5.5	9.5	21.0	494	46.0	94	90 - 137 180 - 265	2.7 1.4
Model 55 SX	Short Desktop	406x397x102	16.0x15.6x4.0	8.6	19.0	475	43.0	90	90 - 137 180 - 265	2.5 1.3
Model 60	Floor-standing	165x483x597	6.5x19.0x23.5	20.0	44.0	1240	46.0	206	90 - 137 180 - 265	5.3 2.7
Model 65	Floor-standing	165x483x597	6.5x19.0x23.5	20.6	45.3	1218	36.5	206	90 - 137 180 - 265	5.3 2.7
Model 70 386 Model 70 486	Narrow Desktop	360x420x140	14.2x16.5x5.5	9.5	21.0	751	46.0	132	90 - 137 180 - 265	3.2 2.0
Model P70 386 -031	Integrated Transportable	465x126x303	18.3x5.0x11.9	8.9	19.9	480	45.0	85	90 - 137 180 - 264	2.4 1.2
Model P70 386 -061/-121	Integrated Transportable	465x126x303	18.3x5.0x11.9	9.0	20.0	600	45.0	85	90 - 137 180 - 265	2.4 1.2
Model 80 386 -0x1/-x1x	Floor-standing	165x483x597	6.5x19.0x23.5	20.6	45.3	1245	46.0	225	90 - 137 180 - 265	5.3 2.7
Model 80 386 -x21/-A31	Floor-standing	166x482x597	6.5x19.0x23.5	20.6	45.3	1390	40.0	225	100 - 125 200 - 240	5.3 2.7

NOTES:

- All systems are classified by the FCC as Class B, suitable for home use. However, the addition of a Class A adapter, such as the Token-Ring Adapter, could make the systems unsuitable for home use.
- All systems are UL 478 approved.
- All systems except the Model P70 386 (see next note) have been tested to operate properly when the air temperature is at least 60° F (15.6° C) and not more than 90° F (32.2° C) with relative humidity between 8% and 80%.
- The Model P70 386 has been tested to operate properly when the air temperature is at least 50° F (10° C) and not more than 95° F (35° C) with relative humidity between 8% and 80%.

[1] The power draw of 16-bit Micro Channel adapters is 7 to 10 watts. The power draw of 32-bit Micro Channel adapters is 7 to 13 watts. Fixed disk power draw ranges from 12 to 50 watts. See Section 6 for details.

[2] Maximum current sustainable by the power supply. Actual current during operation will approximate the power rating (Watts) divided by the input voltage (Vac).

[3] Monochrome models (-001/-C02/-G01/-K02/-L01).

[4] Color models (-004/-C05/-G04/-K05/-L04/-W04/-WTR).

[5] Models with a fixed disk (-x36).

[6] Models without a fixed disk (-x06).

[7] 8530-002 and 8530-021.

Table 4-B. Displays

Display Model	Suggested Retail Price	Maximum Resolution	Viewing Area Width x Height		Dimensions Width x Depth x Height		Weight		Heat Output (BTU/hr)	Power Rating (Watts)	Max. Current (Amps)[1]
			mm	inches	mm	inches	kg	lbs.			
8503	$275	720x640	207x155	8.1x6.1	321x311x312	12.6x12.2x12.3	8.5	18.8	188	55	0.80
8506[2]	$1295	848x1200	216x300	8.5x11.8	334x371x470	13.1x14.6x18.5	22.0	48.5	341	100	1.20
8507	$865	1024x768	356x267	14.0x10.5	476x432x451	18.7x17.0x17.7	23.5	51.7	290	85	1.20
8508[2]	$1295	1600x1200	356x267	14.0x10.5	476x432x451	18.7x17.0x17.7	23.5	51.7	341	100	1.20
8512[3]	$623	720x640	240x180	9.4x7.1	355x394x304[3]	14.0x15.5x12.0[3]	13.5	30.0	325	61	1.00
8513	$750	720x640	207x155	8.1x6.1	321x369x312	12.6x14.5x12.3	10.5	23.0	273	100	0.95
8514	$1620	1024x768	283x212	11.1x8.3	400x415x360	15.8x16.3x14.2	19.0	41.9	307	100	2.00
8515	$950	1024x768	250x187	9.8x7.4	355x349x345	14.0x15.3x13.6	17.0	37.4	341	100	0.95

NOTES:

- All color displays (8512, 8513, and 8514) are capable of displaying up to 256 colors simultaneously from a palette of 262,144 colors at varying resolutions depending on the graphics adapter and the amount of graphics memory available.
- The 8503 and 8507 displays can display 64 shades of gray simultaneously at at varying resolutions depending on the graphics adapter and the amount of graphics memory available. Application colors are automatically converted to gray shades via color summing.
- The 8506 and 8508 displays can display up to 16 shades of gray from a range of 256 shades of gray at varying resolutions depending upon the amount of memory on the PS/2 Image Adapter/A, Feature #4324.
- All displays require an input voltage of 100 - 125 Volts AC with a frequency of 50-60 Hz.
- All displays have been tested to operate properly when the air temperature is at least 60° F (15.6° C) and not more than 90° F C (32.2° C) with relative humidity between 8% and 80% at altitudes not greater than 2134 meters (7000 feet) above sea level.
- Both the power cord and signal cord on all displays are 1.8 meters (6 feet) in length. All displays except the 8512 include a tilt-swivel pedestal.
- All displays are classified as Acoustic Class 1 (no fan or other noise source).

[1] Maximum current sustainable by the power supply. Actual current during operation will approximate the power rating (Watts) divided by the input voltage (Vac).

[2] May only be attached to the PS/2 Image Adapter/A, Feature #4324.

[3] Does not include tilt-swivel pedestal. All displays except the 8512 come with a tilt-swivel pedestal which is included in the height measurements.

SECTION 5. Memory Expansion Alternatives by Model

Applicable memory expansion features for each model, listed in order of preference

Memory expansion alternatives are either SIPs (Single In-line Packages) or Adapters. SIPs (also called SIMMs, or Single In-line Memory Modules) are modules that may be used to expand the system board (planar) or adapters or both, as noted.

On all systems with more than 640KB standard memory, the extra memory is system board memory mapped beginning at the 1MB address. On 80286-based systems, this memory can only be used as extended memory. On 80386SX, 80386, and 80486-based systems, this memory is extended memory that may also be used as expanded memory with the appropriate software drivers.

Table 5-A. IBM PS/2 Models 25-00x/-G0x/-Wxx

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
128KB Memory Expansion Kit	$52	#4105	78X8955	128KB	128KB	150ns	Module for planar.

NOTES:

- These models come with planar (system board) space for 640KB RAM, of which 512KB is occupied. The addition of the 128KB Feature #4105 is required to bring system memory to the full 640KB. Only 640KB of conventional memory is supported.
- There are two XT-bus compatible slots available for adapter expansion, one of which is a half-size (8-inch) slot.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-B. IBM PS/2 Models 25-L0x/-C0x/-K0x

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
No expansion options available							

NOTES:

- These models come fully configured with 640KB of system board memory. The addition of the 128KB Feature #4105 is therefore not required. Only 640KB of conventional memory is supported.
- On the Models 25-C0x/-K0x, there are two XT-bus compatible slots available for adapter expansion, one of which is a half-size (8-inch) slot.
- On the Models 25-L0x, there is only one half-size (8-inch) XT-bus compatible slot available for adapter expansion, since one slot is occupied by the Token-Ring Network PC Adapter.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-C. IBM PS/2 Models 30-001/-002†/-R02†/-021/-R21

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM 2MB Expanded Memory Adapter	$1395	#3905	2685193	2MB	2MB	150ns	Adapter. Fully populated.

NOTES:

- These models come with 640KB planar (system board) memory. No additional system board memory expansion is possible.
- Using the adapter specified, an additional 2MB of memory can be added, which can be configured as expanded memory using the DOS 4.00 driver XMA2EMS.SYS.
- There are three XT-bus compatible slots available for adapter expansion, but the addition of more than one memory adapter is not supported.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-D. IBM PS/2 Models 25-006/-G06/-036/-G36

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
0.5MB Memory Module Kit	$215	#3397	30F5348	512KB	512KB	120ns	Module for planar. Cannot mix w/#7833.
2MB Memory Module Kit	$860	#7833	30F5360	2MB	2MB	120ns	Module for planar. Cannot mix w/#3397.
4.0MB Expanded Memory Option	$2155	#3866	34F2866	4MB	4MB	120ns	Includes the All Chargecard[1] (#3863) and two 2MB Memory Modules (#7833).
All Chargecard	$495	#3863	34F2863	N/A	N/A	N/A	Memory enhancement card for planar[1].

NOTES:

- These models come with four planar (system board) spaces. On models with a hard disk (-036/-G36), the spaces are occupied with 1MB of memory. On models without a hard disk (-006/-G06), the spaces are occupied with 512KB or memory. Using #7833, up to 4MB is possible on the system board by replacing the standard memory on the system board. Using non-IBM expansion options, the system supports up to 15.5MB of total system memory.
- The ability to use a non-IBM memory expansion card in the Personal System/2 Model 25 286 is dependent on the flexibility of the card in establishing its starting memory address. To operate properly in a Model 25 286 with 512KB, a memory expansion adapter must support a starting memory address of 512KB. To operate properly in a Model 25 286 with 1MB, 2MB, or 4MB of system board memory, a memory expansion adapter must support a starting memory address of 384KB plus the total amount of system board memory installed.
- There are two XT-bus compatible slots available for adapter expansion, one of which is a half-size (8-inch) slot.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

[1] See Table 2-D on page 8 for additional information on the All Chargecard.

Table 5-E. IBM PS/2 Models 30 286-E01/-E0R/-E21/-E2R/-E31

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
4.0MB Expanded Memory Option	$2155	#3866	34F2866	4MB	4MB	120ns	Includes the All Chargecard[1] (#3863) and two 2MB Memory Modules (#7833).
3.0MB Expanded Memory Adapter	$2280	#3864	34F2864	3MB	12MB[2]	120ns	Includes the All Chargecard[1] (#3863), the Multifunction Adapter (#8635)[3], and six 0.5MB Modules (#3397).
2MB Memory Module Kit	$860	#7833	30F5360	2MB	2MB	120ns	Modules for planar or #8635. Cannot mix w/#3397.
0.5MB Memory Module Kit	$215	#3397	30F5348	512KB	512KB	120ns	Modules for planar or #8635. Cannot mix w/#7833.
All Chargecard	$495	#3863	34F2863	N/A	N/A	N/A	Memory enhancement card for planar[1].
IBM Personal System/2 Multifunction Adapter[3]	$495	#8635	30F5364	0MB	12MB	120ns	Adapter. Uses #3397/#7833.

NOTES:

- These models come with four system board memory spaces which are occupied with four replaceable 256KB SIPs for a total of 1MB. Early versions of the Model 30 286-E01 and -E21 came with only 512KB on the system board. The original system board SIPs can be replaced by one or two of the 2MB Feature #7833, each consisting of two 1MB modules, for a a total of 2MB or 4MB system board memory. Different size SIPs cannot be used together on the system board.
- The ability to use a non-IBM memory expansion card in the Personal System/2 Model 30 286 is dependent on the flexibility of the card in establishing its starting memory address. To operate properly in a Model 30 286 with 512KB, a memory expansion adapter must support a starting memory address of 512KB. To operate properly in a Model 30 286 with 1MB, 2MB, or 4MB of system board memory, a memory expansion adapter must support a starting memory address of 384KB plus the total amount of system board memory installed.
- There are three AT-bus compatible slots available for adapter expansion.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

[1] See Table 2-D on page 8 for additional information on the All Chargecard.

[2] Requires the replacement of the six 0.5MB Memory Module Kits (Feature #3397) that are included in this option with six 2MB Memory Module Kits (Feature #7833). The adapter is fully populated at a 3MB maximum capacity when using the six 0.5MB Memory Module Kits (twelve 256KB modules) that accompany Feature #3864.

[3] The PS/2 Multifunction Adapter, Feature #8635 can only be used with 512KB of memory on the system board. Additional memory modules may be moved from the system board to the PS/2 Multifunction Adapter. Up to two PS/2 Multifunction Adapters may be installed, providing a maximum of 15MB of additional extended memory. See Table 2-A on page 6 for additional information.

Table 5-F. IBM PS/2 Model 50-021†/-R21†

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM Personal System/2 2-8MB 80286 Memory Expansion Option	$1395	#8286	6450609	2MB	8MB	85ns	Adapter. Uses #5212/#5213.
IBM Personal System/2 2MB Memory Module Kit–85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for #8286. Mix with #5212 OK.
IBM Personal System/2 1MB Memory Module Kit–85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #8286. Mix with #5213 OK.
IBM Personal System/2 0-8MB Expanded Memory Adapter/A†	N/A†	#7259†	1497259	0MB	8MB	120ns	Adapter, replaced by #8286. Uses #3397/#7833.
2MB Memory Module Kit	$860	#7833	30F5360	2MB	2MB	120ns	Modules for #3920† (replacement) or #7259†. Mix with #3397 OK.
0.5MB Memory Module Kit	$215	#3397	30F5348	512KB	512KB	120ns	Modules for #7259†. Mix with #7833 OK.
IBM Personal System/2 80286 Memory Expansion Option†	N/A†	#3006†	6450344	512KB	2MB	150ns	Adapter. Uses #3012.
IBM Personal System/2 80286 Memory Expansion Kit	$215	#3012	6450345	512KB	512KB	150ns	Modules for #3006†.
IBM Personal System/2 2MB Expanded Memory Adapter/A†	N/A†	#3920†	1497252	2MB	8MB	120ns	Adapter. Fully populated with 0.5MB modules (#3397) replaceable by 2MB modules (#7833).

NOTES:

- These models come with one system board memory space which is occupied with a non-replaceable 1MB module.
- Only 1MB system board memory is possible; of this 640KB is conventional user memory and 384KB is extended memory which cannot be used as expanded memory.
- Using the above-referenced adapters and kits, up to 15MB of additional extended memory can be added. The memory from any one adapter can be configured as expanded memory using the DOS 4.00 driver XMA2EMS.SYS.
- There are three 16-bit Micro Channel slots available for adapter expansion. One slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of this model can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-G. IBM PS/2 Models 50Z-031/-061

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM Personal System/2 2MB Memory Module Kit–85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for planar (replacement) or #8286. Mix with #5212 OK on #8286.
IBM Personal System/2 2-8MB 80286 Memory Expansion Option	$1395	#8286	6450609	2MB	8MB	85ns	Adapter. Uses #5212/#5213.
IBM Personal System/2 1MB Memory Module Kit–85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #8286. Mix with #5213 OK.
IBM Personal System/2 0-8MB Expanded Memory Adapter/A†	N/A†	#7259†	1497259	0MB	8MB	120ns	Adapter, replaced by #8286. Uses #3397/#7833.
2MB Memory Module Kit	$860	#7833	30F5360	2MB	2MB	120ns	Modules for #3920† (replacement) or #7259†. Mix w/#3397 OK.
0.5MB Memory Module Kit	$215	#3397	30F5348	512KB	512KB	120ns	Modules for #7259†. Mix w/#7833 OK.
IBM Personal System/2 80286 Memory Expansion Option†	N/A†	#3006†	6450344	512KB	2MB	150ns	Adapter. Uses #3012.
IBM Personal System/2 80286 Memory Expansion Kit	$215	#3012	6450345	512KB	512KB	150ns	Modules for #3006†.
IBM Personal System/2 2MB Expanded Memory Adapter/A†	N/A†	#3920†	1497252	2MB	8MB	120ns	Adapter. Fully populated with 0.5MB modules (#3397) replaceable by 2MB modules (#7833).

NOTES:

- These models come with one system board memory space which is occupied with a replaceable 1MB module. This 1MB module can be replaced by the 2MB Feature #5213 to achieve the maximum of 2MB on the system board.
- Any of the system board memory above 640KB is extended memory only and cannot be used as expanded memory.
- Using the above-referenced planar replacement modules, adapters, and kits, up to 15MB of extended memory can be added. The memory from any one adapter can be configured as expanded memory using the DOS 4.00 driver XMA2EMS.SYS.
- There are three 16-bit Micro Channel slots available for adapter expansion. One slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-H. IBM PS/2 Models 55 SX-031/-R31/-061/-R61

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for planar. Mix w/#5212 and #5213 OK.
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for planar or #8286. Mix with #5212 OK.
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for planar or #8286. Mix with #5213 OK.
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	Adapter. Uses any combination of #3933, #5212, or #5213.
IBM Personal System/2 2-8MB 80286 Memory Expansion Option	$1395	#8286	6450609	2MB	8MB	85ns	Adapter. Uses #5212/#5213.
IBM Personal System/2 0-8MB Expanded Memory Adapter/A†	N/A†	#7259†	1497259	0MB	8MB	120ns	Adapter, replaced by #8286. Uses #3397/#7833.
2MB Memory Module Kit	$860	#7833	30F5360	2MB	2MB	120ns	Modules for #7259†. Mix w/#3397 OK.
0.5MB Memory Module Kit	$215	#3397	30F5348	512KB	512KB	120ns	Modules for #7259†. Mix w/#7833 OK.

NOTES:

- The 8555-031 and -R31 come with two system board memory spaces which are occupied with replaceable 1MB modules. These 1MB modules can be replaced with the 2MB modules, Feature #5213, or the 4MB modules, Feature #3933. The 8555-061 and -R61 come with two system board memory spaces, one of which is occupied with a 2MB module. The free system board space can be filled with either Feature #5212, Feature #5213, or Feature #3933.
- Using the above-referenced planar expansion options, adapters, and kits, up to 14MB of additional extended memory can be configured. Any memory above 640KB can be configured as expanded memory using the DOS 4.00 drivers XMAEM.SYS and XMA2EMS.SYS.
- There are three 16-bit Micro Channel slots available for adapter expansion. One slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-I. IBM PS/2 Models 60-041/-071

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM Personal System/2 2-8MB 80286 Memory Expansion Option	$1395	#8286	6450609	2MB	8MB	85ns	Adapter. Uses #5212/#5213.
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for #8286. Mix with #5212 OK.
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #8286. Mix with #5213 OK.
IBM Personal System/2 0-8MB Expanded Memory Adapter/A†	N/A†	#7259†	1497259	0MB	8MB	120ns	Adapter, replaced by #8286. Uses #3397/#7833.
2MB Memory Module Kit	$860	#7833	30F5360	2MB	2MB	120ns	Modules for #3920†(replacement) or #7259†. Mix w/#3397 OK.
0.5MB Memory Module Kit	$215	#3397	30F5348	512KB	512KB	120ns	Modules for #7259†. Mix w/#7833 OK.
IBM Personal System/2 80286 Memory Expansion Option†	N/A†	#3006†	6450344	512KB	2MB	150ns	Adapter. Uses #3012.
IBM Personal System/2 80286 Memory Expansion Kit	$215	#3012	6450345	512KB	512KB	150ns	Modules for #3006†.
IBM Personal System/2 2MB Expanded Memory Adapter/A†	N/A†	#3920†	1497252	2MB	8MB	120ns	Adapter. Fully populated with 0.5MB modules (#3397) replaceable by 2MB modules (#7833).

NOTES:

- These models come with one system board memory space which is occupied with a non-replaceable 1MB module.
- Only 1MB system board memory is possible; of this 640KB is conventional user memory and 384KB is extended memory which cannot be used as expanded memory.
- Using the above-referenced adapters and kits, up to 15MB of additional extended memory can be added. The memory from any one adapter can be configured as expanded memory using the DOS 4.00 driver XMA2EMS.SYS.
- There are seven 16-bit Micro Channel slots available for adapter expansion. One slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-J. IBM PS/2 Models 65-061/-121

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for planar. Mix w/#5212 and #5213 OK.
IBM Personal System/2 2MB Memory Module Kit--85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for planar or #8286. Mix with #5212 OK.
IBM Personal System/2 1MB Memory Module Kit--85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for planar or #8286. Mix with #5213 OK.
IBM Personal System/2 2-8MB 80286 Memory Expansion Option	$1395	#8286	6450609	2MB	8MB	85ns	Adapter. Uses #5212/#5213.

NOTES:

- These models come with two system board memory spaces, one of which is occupied with a replaceable 2MB, 100ns memory module. The system board spaces can be filled with the 1MB Feature #5212, the 2MB Feature #5213, or the 4MB Feature #3933. Several system board memory alternatives are possible by adding various combinations of 1MB, 2MB or 4MB memory options to the empty system board space or by replacing the installed 2MB module for a maximum of 8MB.
- Using the above-referenced adapters and kits, up to 13.5MB of additional extended memory can be added. The memory can be configured as expanded memory using the DOS 4.00 driver XMA2EMS.SYS.
- There are seven 16-bit Micro Channel slots available for adapter expansion. One slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-K. IBM PS/2 Models 70 386-E61/-061/-121

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM Personal System/2 2MB Memory Module Kit--85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for planar, #3011, #3077, or #5211. Mix w/#5212 OK.
IBM Personal System/2 1MB Memory Module Kit--85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for planar, #3011, #3077, or #5211. Mix w/#5213 OK.
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	Adapter. Uses any combination of #3933, #5212, or #5213.
PS/2 Enhanced 80386 Memory Expansion Option 2MB Kit	$1395	#3077	34F3077	2MB	14MB	85ns	Adapter. Uses any combination of #3933, #5212, or #5213.
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for #3011 or #3077. Mix w/#5212 and #5213 OK.
IBM Personal System/2 2-8MB 80386 Memory Expansion Option	$1395	#5211	6450605	2MB	8MB	85ns	Adapter, replaced by #3077. Uses #5212/#5213.
IBM Personal System/2 80386 Memory Expansion Option†	N/A†	#3019†	6450367	2MB	6MB	80ns	Adapter, replaced by #3077. Uses #3064.
IBM Personal System/2 80386 Memory Expansion Kit	$995	#3064	6450372	2MB	2MB	80ns	Module for #3019†.

NOTES:

- These models come with three system board memory spaces, one of which is occupied with a 2MB module. The two free system board spaces can be filled with any combination of the 1MB Feature #5212 or the 2MB Feature #5213. Early versions of the Model 70 386-E61 came with only 1MB on the system board, requiring replacement of the single 1MB module with a 2MB module to achieve the 6MB system-board capacity.
- Using the above-referenced planar expansion options, adapters, and kits, up to 15MB of additional extended memory can be configured for the 8570-061. Up to 14MB of additional extended memory can be configured for the 8570-121. Any memory above 640KB can be configured as expanded memory using the DOS 4.00 drivers XMAEM.SYS and XMA2EMS.SYS.
- There are two 32-bit and one 16-bit Micro Channel slots available for adapter expansion. Memory adapters require a 32-bit slot. The 16-bit slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-L. IBM PS/2 Models 70 486-A61/-A21/-B61/-B21

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM Personal Sytem/2 2MB Memory Module Kit—80ns	$1495	#5214	6450608	2MB	2MB	80ns	Module for planar.
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	Adapter. Uses any combination of #3933, #5212, or #5213.
PS/2 Enhanced 80386 Memory Expansion Option 2MB Kit	$1395	#3077	34F3077	2MB	14MB	85ns	Adapter. Uses any combination of #3933, #5212, or #5213.
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for #3011 or #3077. Mix w/#5212 and #5213 OK.
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5212 and #3933 OK.
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #3011, #3077, or #5211. Mix w/#5213 and #3933 OK.
IBM Personal System/2 2-8MB 80386 Memory Expansion Option	$1395	#5211	6450605	2MB	8MB	85ns	Adapter, replaced by #3077. Uses #5212/#5213.
IBM Personal System/2 80386 Memory Expansion Option†	N/A†	#3019†	6450367	2MB	6MB	80ns	Adapter, replaced by #3077. Uses #3064.
IBM Personal System/2 80386 Memory Expansion Kit	$995	#3064	6450372	2MB	2MB	80ns	Module for #3019†.

NOTES:

- These models come with four system board memory spaces, one of which is occupied with a 2MB module. The free spaces can be filled with up to three of the 2MB modules, Feature #5214.
- Using the above-referenced planar expansion options, adapters, and kits, up to 14MB of additional extended memory can be configured. Any memory above 640KB can be configured as expanded memory using the DOS 4.00 drivers XMAEM.SYS and XMA2EMS.SYS.
- There are two 32-bit and one 16-bit Micro Channel slots available for adapter expansion. Memory adapters require a 32-bit slot. The 16-bit slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of the models -A61 and -A21 can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.
- The Model 70 486-B21 is equivalent to a Model 70 386-A21 upgraded to include the IBM Personal System/2 486/25 Power Platform. Likewise, the Model 70 486-B61 is equivalent to a Model 70 386-A61 except that the 60MB hard disk of the Model 70 486-B61 has been enhanced. (See SECTION 6 for a comparison of drives.)
- The -A61 and -A21 models can be upgraded via the IBM Personal System/2 486/25 Power Platform, Feature #3995. This upgrade includes a 25MHz Intel i486 32-bit microprocessor featuring an internal memory cache controller, an internal 8KB cache, and an internal floating-point processing unit that performs the functions of an external 80387 Math Co-Processor.
- For especially demanding numeric-intensive applications, the performance of these models can be enhanced via the IBM Personal System/2 Wizard Adapter, Feature #3462. This adapter includes a 33MHz Intel i860 microprocessor for advanced, numeric-intensive applications. See Table 2-D on page 8 for further details.

Table 5-M. IBM PS/2 Models P70 386-031/-061/-121

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for planar, #3011, #3077, and/or #5211. Mix w/#5212 and #3933 OK.
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	Adapter. Uses any combination of #3933, #5212, or #5213.
PS/2 Enhanced 80386 Memory Expansion Option 2MB Kit	$1395	#3077	34F3077	2MB	14MB	85ns	Adapter. Uses any combination of #3933, #5212, or #5213.
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for #3011 or #3077. Mix w/#5212 and #5213 OK.
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #3011, #3077, or #5211. Mix w/#5213 and #3933 OK.
IBM Personal System/2 2-8MB 80386 Memory Expansion Option	$1395	#5211	6450605	2MB	8MB	85ns	Adapter, replaced by #3077. Uses #5212/#5213.
IBM Personal System/2 80386 Memory Expansion Option†	N/A†	#3019†	6450367	2MB	6MB	80ns	Adapter, replaced by #3077. Uses #3064.
IBM Personal System/2 80386 Memory Expansion Kit	$995	#3064	6450372	2MB	2MB	80ns	Module for #3019†.

NOTES:

- These models come with four system board memory spaces. On the 4MB models (-061 and -121), two of the spaces are occupied with 2MB modules. On the 2MB model (-031), one space is occupied with a 2MB module. Free system board spaces can be filled with the 2MB modules, Feature #5213.
- Using the above-referenced planar expansion options, adapters, and kits, up to 16MB of total system memory can be configured. Any memory above 640KB can be configured as expanded memory using the DOS 4.00 drivers XMAEM.SYS and XMA2EMS.SYS.
- There is one full-size, 32-bit Micro Channel slot and one half-size, 16-bit slot available for adapter expansion. Memory adapters require the 32-bit slot.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-N. IBM PS/2 Model 80 386-041

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM Personal System/2 System Board Memory Expansion Kit	$728	#3009	6450375	1MB	1MB	80ns	Module for planar.
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	Adapter. Uses #3933, #5212, and/or #5213.
PS/2 Enhanced 80386 Memory Expansion Option 2MB Kit	$1395	#3077	34F3077	2MB	14MB	85ns	Adapter. Uses #3933, #5212, and/or #5213.
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for #3011 or #3077. Mix w/#5212 and #5213 OK.
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5212 OK.
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5213 OK.
IBM Personal System/2 2-8MB 80386 Memory Expansion Option	$1395	#5211	6450605	2MB	8MB	85ns	Adapter, replaced by #3077. Uses #5212/#5213.
IBM Personal System/2 80386 Memory Expansion Option†	N/A†	#3019†	6450367	2MB	6MB	80ns	Adapter, replaced by #3077. Uses #3064.
IBM Personal System/2 80386 Memory Expansion Kit	$995	#3064	6450372	2MB	2MB	80ns	Module for #3019†.

NOTES:

- This model comes with two system board memory spaces, one of which is occupied with a 1MB module. The free space can be filled with the 1MB Feature #3009.
- Using the above-referenced planar expansion options, adapters, and kits, up to 15MB of additional extended memory can be configured. Any memory above 640KB can be configured as expanded memory using the DOS 4.00 drivers XMAEM.SYS and XMA2EMS.SYS.
- There are three 32-bit and four 16-bit Micro Channel slots available for adapter expansion. Memory adapters require a 32-bit slot. One 16-bit slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of this model can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-O. IBM PS/2 Model 80 386-071

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	Adapter. Uses #3933, #5212, and/or #5213.
PS/2 Enhanced 80386 Memory Expansion Option 2MB Kit	$1395	#3077	34F3077	2MB	14MB	85ns	Adapter. Uses #3933, #5212, and/or #5213.
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for #3011 or #3077. Mix w/#5212 and #5213 OK.
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5212 OK.
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5213 OK.
IBM Personal System/2 2-8MB 80386 Memory Expansion Option	$1395	#5211	6450605	2MB	8MB	85ns	Adapter, replaced by #3077. Uses #5212/#5213.
IBM Personal System/2 80386 Memory Expansion Option†	N/A†	#3019†	6450367	2MB	6MB	80ns	Adapter, replaced by #3077. Uses #3064.
IBM Personal System/2 80386 Memory Expansion Kit	$995	#3064	6450372	2MB	2MB	80ns	Module for #3019†.

NOTES:

- This model comes with two system board memory spaces, both of which are occupied with 1MB modules.
- Using the above-referenced planar expansion options, adapters, and kits, up to 14MB of additional extended memory can be configured. Any memory above 640KB can be configured as expanded memory using the DOS 4.00 drivers XMAEM.SYS and XMA2EMS.SYS.
- There are three 32-bit and four 16-bit Micro Channel slots available for adapter expansion. Memory adapters require a 32-bit slot. One 16-bit slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of this model can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-P. IBM PS/2 Models 80 386-111/-121/-311/-321

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
80386 System Board Memory Expansion Kit	$995	#8722	6450379	2MB	2MB	80ns	Module for planar.
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	Adapter. Uses #3933, #5212, and/or #5213.
PS/2 Enhanced 80386 Memory Expansion Option 2MB Kit	$1395	#3077	34F3077	2MB	14MB	85ns	Adapter. Uses #3933, #5212, and/or #5213.
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for #3011 or #3077. Mix w/#5212 and #5213 OK.
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5212 OK.
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5213 OK.
IBM Personal System/2 2-8MB 80386 Memory Expansion Option	$1395	#5211	6450605	2MB	8MB	85ns	Adapter, replaced by #3077. Uses #5212/#5213.
IBM Personal System/2 80386 Memory Expansion Option†	N/A†	#3019†	6450367	2MB	6MB	80ns	Adapter, replaced by #3077. Uses #3064.
IBM Personal System/2 80386 Memory Expansion Kit	$995	#3064	6450372	2MB	2MB	80ns	Module for #3019†.

NOTES:

- These models come with two system board memory spaces, one of which is occupied with a 2MB module. The free space can be filled with the 2MB Feature #8722.
- Using the above-referenced planar expansion options, adapters, and kits, up to 14MB of additional extended memory can be configured. Any memory above 640KB can be configured as expanded memory using the DOS 4.00 drivers XMAEM.SYS and XMA2EMS.SYS.
- There are three 32-bit and four 16-bit Micro Channel slots available for adapter expansion. Memory adapters require a 32-bit slot. One 16-bit slot incorporates the video extension interface that allows the addition of an advanced video graphics board such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

Table 5-Q. IBM PS/2 Models 80 386-A21/-A31

Feature Name	Suggested Retail Price	Feature Number	Part Number	Memory		Memory Speed	Description/For use on:
				Std.	Max.		
IBM Personal System/2 4MB System Board Memory Expansion Kit	$1995	#1060	6451060	4MB	4MB	80ns	Module for planar.
PS/2 Enhanced 80386 Memory Expansion Option 4MB Kit	$2695	#3011	34F3011	4MB	14MB	85ns	Adapter. Uses #3933, #5212, and/or #5213.
PS/2 Enhanced 80386 Memory Expansion Option 2MB Kit	$1395	#3077	34F3077	2MB	14MB	85ns	Adapter. Uses #3933, #5212, and/or #5213.
PS/2 4MB Memory Module Kit	$2295	#3933	34F2933	4MB	4MB	85ns	Module for #3011 or #3077. Mix w/#5212 and #5213 OK.
IBM Personal System/2 1MB Memory Module Kit—85ns	$495	#5212	6450603	1MB	1MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5213 OK.
IBM Personal System/2 2MB Memory Module Kit—85ns	$995	#5213	6450604	2MB	2MB	85ns	Module for #3011, #3077, and/or #5211. Mix w/#5212 OK.
IBM Personal System/2 2-8MB 80386 Memory Expansion Option	$1395	#5211	6450605	2MB	8MB	85ns	Adapter, replaced by #3077. Uses #5212/#5213.
IBM Personal System/2 80386 Memory Expansion Option†	N/A†	#3019†	6450367	2MB	6MB	80ns	Adapter, replaced by #3077. Uses #3064.
IBM Personal System/2 80386 Memory Expansion Kit	$995	#3064	6450372	2MB	2MB	80ns	Module for #3019†.

NOTES:

- These models come with two system board memory spaces, one of which is occupied with a 4MB module. The free space can be filled with the 4MB Feature #1060.
- Using the above-referenced planar expansion options, adapters, and kits, up to 12MB of additional extended memory can be configured. Any memory above 640KB can be configured as expanded memory using the DOS 4.00 drivers XMAEM.SYS and XMA2EMS.SYS.
- There are four 32-bit and three 16-bit Micro Channel slots available for adapter expansion. Memory adapters require a 32-bit slot. Two 16-bit slots incorporate the video extension interface that allows the addition of advanced video graphics boards such as the IBM 8514/A in order to upgrade video function without duplicating the built-in VGA circuitry.
- For certain numeric-intensive applications, the performance of these models can be enhanced by the addition of a math co-processor. See Table 2-D on page 8 for additional details.

SECTION 6. Direct Access Storage Device Summary

A Summary of Personal System/2 Fixed Disks and Diskette Drives

Direct Access Storage Devices (DASD) are distinguished by a number of characteristics relating to capacity and performance. These characteristics do not always apply to different drives and devices. For example, the number of cylinders is more relevant to fixed disks than it is to diskettes, while the converse is true of tracks per inch. Use caution before making conclusions based on comparisons.

Some of the characteristics that determine capacity include the number of sectors per track, tracks per inch, the number of cylinders, bytes per sector (usually 512), and the number of heads and platters. Factors contributing to performance include data transfer rate, average access (seek) time, average track-to-track access time, interleave factor, caching (if any), and controller/drive interface type. The best known of these factors, average access time, is not the best indicator of drive performance but rather a common bottleneck.

Because PS/2 DASD devices represent departures from previous technologies, exercise particular caution before making comparisons. For example, on ESDI PS/2 drives, actual physical sectors are mapped to logical sectors via Relative Block Addressing to maintain compatibility with DOS applications. This indirection causes most benchmark programs to incorrectly report many PS/2 drive specifications. In other words, the benchmark may think it is measuring a sequential read based on physically contiguous sectors when in reality the sectors are only logically contiguous and are physically far apart. The converse is also possible. In any event, few benchmarks accurately reflect PS/2 DASD performance. Again, nothing can replace hands-on experience in comparing systems.

Table 6-A. IBM PS/2 ST-506 Fixed Disk Drives

Drive that is standard on: or available as Feature #: or Part #:			8530-E21 8530-021	8530-E31[1]	8550-021†		855x-031	85xx-041[1]
	#4107 78X8958	#4110† 27F4130†	#4115 6451031			#1030 6451030	#3046 6450354	
Suggested Retail Price:	$818	N/A†	$787			$695	$1500	
Capacity:	20MB	20MB	20MB	30MB	20MB	30MB	30MB	44MB
Integrated Controller?	Yes	No	Yes	Yes	No	No	Yes	No
Size	3.5"	3.5"	3.5"	3.5"	3.5"	3.5"	3.5"	5.25"
Drive Type:	26	N/A	26	33	30		33	31
Sectors/track:	17	26	17	25	17	25	25	17
Heads:	4	4	4	4	4	4	4	7
Autopark Heads?	No	Yes	Yes	Yes	No	No	No	Yes
Cylinders:	610	400	610	615	610	615	615	733
Data Transfer Rate:	5.0Mbps	7.5Mbps	7.5Mbps	7.5Mbps	5.0Mbps	7.5Mbps	7.5Mbps	5.0Mbps
Access (Seek) Time Average: Track-to-Track:	80ms 12ms	38ms 15ms	27ms 15ms	27ms 15ms	80ms 15ms	39ms 15ms	39ms 15ms	40ms 15ms
Interleave:	2:1	3:1	3:1	3:1	1:1	3:1	1:1	1:1
Power Draw (Watts) Idle: Max:	15.5 17	15.5 17	15.5 17		15.5 17	12 14	12 14	31 39
Also supported on:	8525-xxx	8525-xxx	8530-001 8530-E01			8530-001 8530-E01	8550-061	

NOTES:

- For any ST-506 drive, configuration information may be obtained by examining the hex parameters of the first logical sector—i.e. cylinder 0, head 0, sector 1. Consult the appropriate technical reference for details.

[1] Due to variations in manufacturing and sourcing, the drives shipped with some systems may not match these specifications.

Table 6-B. IBM PS/2 ESDI Fixed Disk Drives

Drive that is standard on:	8573-031	8550-061 8555-061 857x-x61	8570-B61	857x-x21	85xx-071[1]	8580-111	8580-311
or available as Feature #: or Part #:		#6666 6450606			#3051 6450355	#8730 6450377	#6023 6450381
Suggested Retail Price:		$1745			$2580	$3765	$6805
Capacity:	30MB	60MB	60MB	120MB	70MB	115MB	314MB
Integrated Controller?	Yes[2]	Yes[2]	Yes[2]	Yes[2]	No	No	No
Size:	3.5"	3.5"	3.5"	3.5"	5.25"	5.25"	5.25"
Sectors/track:	32	26	32	32	36	36	34
Heads:	2	6	4	4	7	7	15
Autopark Heads?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cylinders:		762	928	920	583	915	1225
Data Transfer Rate:	10Mbps	8.4Mbps	10.2Mbps	10Mbps	10Mbps	10Mbps	10Mbps
Access (Seek) Time Average: Track-to-Track:	 19ms 5ms	 27ms 15ms	 23ms 5ms	 23ms 5ms	 30ms 5ms	 28ms 5ms	 23ms 5ms
Interleave:	1:1	1:1	1:1	1:1	1:1	1:1	1:1
Power Draw (Watts) Idle: Max:	 12 17	 13 19	 13 19	 13 19	 31 39	 31 39	 35 42
Also supported on:		8550-021†[3] 8550-031			8580-111 8580-311	8560-071 8580-071 8580-311	8580-071 8580-111

NOTES:

- Much of the configuration information reported above may be obtained by examining the hex parameters of the first logical sector, or cylinder 0, head 0, sector 1. Consult the appropriate technical reference for details.

[1] Due to variations in manufacturing and sourcing, the drives shipped with some systems may not match these specifications.

[2] Although this is an ESDI drive, it has an SCDI integrated controller which does not use memory in the ROM BIOS space.

[3] The Model 50-021† requires an interposer card to be installed before a fixed disk with an integrated controller may be used. This interposer card is included with Feature #6666.

Table 6-C. IBM PS/2 SCSI Fixed Disk Drives

Drive that is standard on:	8565-061	8580-A21 8580-121 8565-121	8580-A31 8580-321
or available as Feature #: or Part #:	#1049 6451049	#1050 6451050	#1055 6451055
Suggested Retail Price:	$1200	$1920	$5500
Capacity:	60MB	120MB	320MB
Size:	3.5"	3.5"	3.5"
Sectors/track:	32	32	48
Heads:	4	8	14
Cylinders (data):	920	920	949
Data Transfer Rate:	10.0 Mbps	10.0 Mbps	16.0 Mbps
Access (Seek) Time Average: Latency:	23.0ms 8.33ms	23.0ms 8.33ms	12.5ms 6.95ms
Interleave:	1:1	1:1	1:1
Sector Buffer Size:	32KB	32KB	64KB
# of Disks:	2	4	8
Also supported on:	856x-xxx 8580-xxx	856x-xxx 8580-xxx	856x-xxx 8580-xxx

NOTES:

- See Announcement Letter #190-058 for additional information about configuration and expansion capabilities.

Table 6-D. IBM PS/2 Diskette Drives

Drive:	3.5" Drives					5.25" Drives		
	720KB 1"-high	720KB	1.44MB 1"-high [1]	1.44MB 1"-high [1]	1.44MB [1]	360KB External [1]	1.2MB External	1.2MB Internal [2]
Feature/Order #:	#1056	#4106	#1063	#1026	#3057	4869-001	4869-002	#1006
Part Number:	6451056	78X8956	6451063	6451026	6450353	4869001	4869002	6451006
Capacity:	720KB	720KB	1.44MB	1.44MB	1.44MB	360KB	1.2MB	1.2MB
Suggested Retail Price:	$159	$180	$263	$263	$263	$512	$509	$280
Rotational speed (rpm):	300	300	300	300	300	300	360	360
Data transfer rate (bps):	250KB	250KB	500KB	500KB	500KB	250KB	500KB	500KB
Track-to-track access (ms) [3]:	6	6	3	3	3	6	3	3
Number of tracks:	80	80	80	80	80	40	80	80
Number of R/W heads:	2	2	2	2	2	2	2	2
Track Density (tracks/inch):	135	135	135	135	135	48	96	96
Number of sectors/track:	9	9	18	18	18	9	15	15
Sector size (bytes/sector):	512	512	512	512	512	512	512	512
Sector interleave:	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1
Standard on:	8525-00x [4] 8525-G0x [4] 8525-L0x [4] 8525-C0x (2) [4] 8525-K0x (2) [4]	8525-00x [5] 8525-G0x [5] 8525-L0x [5] 8525-C0x (2) [5] 8525-K0x (2) [5] 8530 0x1 8530-002† (2)	8525-xx6	8530-Exx 8580-Axx 8565-xxx	855x-xxx 8560-xxx 857x-xxx 8580-xxx			
May be added to:	8525-00x [4] 8525-G0x [4] 8525-L0x [4]	8525-00x [5] 8525-G0x [5] 8525-L0x [5] 8530-0x1	8525-xx6	8530-001 8530-Exx [6] 8565-xxx [12] 8580-x21 8580-Axx [12]	8530-xxx [6] 855x-xxx 8560-xxx 857x-xxx 8580-xxx	8525-xx1 [7] 8525-xx6 [7] 8530-xx1 [7] 8550-xxx [8] 8560-xxx [8] 8555-xxx [8] 8565-xxx [8] 8570-xxx [8] 8573-xxx [10] 8580-xxx [8]	8550-xxx [11] 8555-xxx [9] 8560-xxx [11] 8565-xxx [9] 8570-xxx [11] 8573-xxx [9] 8580-xxx [11]	8560-xxx [11] 8565-xxx [9] 8580-xxx [11]

NOTES:

[1] Recognized by the system as Drive B: when added as a second drive; therefore, precludes the use of any other drive recognized as Drive B:.

[2] When installed, precludes the addition of an internal optical disk or second fixed disk. An additional External 5.25" Diskette Drive (4869-001 or 4869-002) may also be attached to the PS/2 5.25-inch Diskette Adapter/A (Feature #1007, Part Number 6451007, $200) required by this option.

[3] The access time is linear, i.e., to access 10 tracks would take 6 ms times 10 or 60 ms. All diskette drives use linear step rates.

[4] For systems with serial number higher than 100,000.

[5] For systems with serial number less than 100,000.

[6] Requires separately orderable cable, bezel, and instructions. For Feature #1026, order Feature #1034, Part Number 6451034, $25. For Feature #3057, order Feature #1037, Part Number 6451037, $30.

[7] Requires both the PS/2 5.25" External Diskette Drive Adapter, (Feature #8750, Part Number 6450244, $70) and Cable, (Feature #4114, Part Number 27F4245, $18). For the 8525-xx1, the Installation Guide and User's Guide must also be ordered separately (S48G-2301).

[8] Requires PS/2 5.25-inch Diskette Adapter/A (Feature #1007, Part Number 6451007, $200) or External Diskette Drive Adapter/A (Feature #8760, Part Number 6450245, $70). When Feature #8760 is used, no device drivers are required; however, the drive is recognized by the system as Drive B: and therefore precludes the use of any other drive that must also be installed as Drive B:. Device drivers are included with Feature #1007 for DOS and OS/2, allowing the drive to be recognized as the first available letter following C:.

[9] Requires PS/2 5.25-inch Diskette Adapter/A (Feature #1007, Part Number 6451007, $200). Limit one per system; Feature #8760 may not be used. However, Feature #2716 may be used simultaneously with Feature #1007 on the 8573-xxx. Device drivers are included for DOS and OS/2, allowing the drive to be recognized as the first available letter following C:.

[10] Requires PS/2 5.25-inch Diskette Adapter/A (Feature #1007, Part Number 6451007, $200) or External Storage Device Cable (Feature #2716, Part Number 23F2716, $99). Device drivers are included with Feature #1007 for DOS and OS/2, allowing the drive to be recognized as the first available letter following C:. Feature #2716 configures the 4869-001 as Drive B:. Both features may co-exist on the same system.

[11] Requires PS/2 5.25-inch Diskette Adapter/A (Feature #1007, Part Number 6451007, $200). Limit one per system; however, Feature #8760 can be added to allow simultaneous use of the 4869-001. Device drivers are included for DOS and OS/2, allowing the drive to be recognized as the first available letter following C:.

[12] Requires separately orderable cable, bezel, and instruction:—Feature #1059, Part Number 6451059, $15.

SECTION 7. IBM Operating System/2 Memory and Storage

Recommendations and Requirements

Table 7-A. OS/2 Version 1.2 DOS Compatibility Session Memory

Function	CONFIG.SYS Command	Low Memory Usage (KB)
BASE SYSTEM		
Low system kernel, base device driver, and DOS emulator[1]	DEVICE=DOS.SYS	115
BASE SYSTEM OPTIONS		
Mouse support[2]	DEVICE=MOUSE.SYS DEVICE=POINTDD.SYS	23
DOS EGA register interface	DEVICE=EGA.SYS	2
Enable TRACE for RAS	TRACE=ON	4
Data file find	APPEND in AUTOEXEC.BAT	5
ANSI screen driver function	DEVICE=ANSI.SYS	2
Memory disk support	DEVICE=VDISK.SYS	1
COMMUNICATIONS SUPPORT		
Standard Edition async support	DEVICE=COMX.SYS	9
Extended Edition async support	DEVICE=ASYNCDDX.SYS	24
3270 coaxial DFT support	DEVICE=DFTDD.SYS	1
5250 twinaxial support (Micro Channel)	DEVICE=TIPINDD.SYS	18
5250 twinaxial support (AT bus)	DEVICE=TIPISDD.SYS	17
SDLC support	DEVICE=SDLCDD.SYS	25
X.25 support	DEVICE=ICARICIO.SYS	13
LAN SUPPORT		
Base LAN support[3]	DEVICE=LANDD.SYS	1
Token-Ring support	DEVICE=TRNETDD.SYS	1
PC Network support	DEVICE=PCNETDD.SYS	40
ETHERAND™ support		40
NETBIOS support	DEVICE=NETBDD.SYS	16
LAN Requester[4]	DEVICE=NETWKSTA.SYS	14

NOTES:

- Available memory will approximate 640KB less between 2KB and 13KB depending on the machine model and the total of the above amounts used.

[1] Required functions.

[2] Automatically installed by system, but removable by changing CONFIG.SYS.

[3] Required for Token-Ring, PC Network, or ETHERAND support.

[4] Required for LAN Requester support.

Table 7-B. OS/2 Extended Edition Version 1.2 Memory and Storage

OS/2 Extended Edition Components and Applications	Recommended Memory Size (MB)	Recommended Fixed Disk Space (MB)
OPERATING SYSTEM		
Base Operating System (Required)	2.5	12.0[1]
DOS Compatibility[2]	0.5	
High Performance File System	0.3	
Segment Swap Data Set[3]		2.5
COMMUNICATIONS MANAGER		
Base (required for communications operations, including LAN functions)	0.1	2.7
3270 Terminal Emulation[4]	0.3	0.6
3270 host print and host print emulation	0.3	
SNA gateway[5]	0.1	0.2
5250 Work Station Feature[5]	0.2	0.4
ASCII Terminal Emulation	0.3	0.4
APPC	0.4	0.3
LUA[5]	0.2	0.2
File Transfer[6]	0.3	
LAN Communications		0.3[7]
X.25 Communications		0.8
Configuration Services		3.1
Terminal emulator keyboard remap		1.0
Programming Interfaces (APIs)		1.0
DATABASE MANAGER		
Database Services (standalone)	1.3	3.4
Database Requester[8] [9]	0.5	2.8
Database Server[5] [8]	1.5	3.6
- For each additional concurrent process	0.15	
- For each additional database		1.1[9]
Query Manager	1.6	3.6
LOCAL AREA NETWORK		
Requester	0.5	5.5
OS/2 LAN Server Version 1.2	2.3	6.5
APPLICATIONS		
CICS OS/2 Version 1.2	0.9 or more	4.2
Provided by the supplier of the application.		

NOTES:

- The numbers shown in this table are the recommended memory and storage size in megabytes for concurrent operation of the designated OS/2 functions. If you do not wish to concurrently execute all installed functions and applications, then the memory required is less– the sum of the Operating System Base and the particular functions and applications the user wishes to execute concurrently as well as an allowance for user data.

[1] Includes components unique to Extended Edition. For Standard Edition, reduce this amount by 1.0MB.

[2] Automatically installed; but may be removed by changing the PROTECTONLY = NO statement in the CONFIG.SYS file to PROTECTONLY = YES.

[3] Testing indicates a 2.5MB swap file is adequate for many of the OS/2 environments. However, the swap area is dynamically allocated by the operating system, subject to the applications' attempt to use more memory than is available. A swap file larger or smaller than 2.5MB may be needed.

[4] If the 3270 connection is LAN, SDLC, or X.25 (i.e., not a DFT coaxial connection), then also include APPC requirements.

[5] APPC (and therefore Communications Manager base) is a prerequisite for this function.

[6] Concurrent file-transfer requires 0.3MB for each session.

[7] Add this number for each type of LAN adapter that is installed.

[8] If DOS Database Requester is installed on Database Server, an additional 1.1MB fixed disk space is required.

[9] Add at least this number for each database. Fixed disk requirements may be greater or less subject to many variables including the amount of user data.

SECTION 8. Other Information

Table 8-A. Micro Channel Configuration Reference

Feature Name	ID File Name (.ADF)	Feature Number	Part Number	Diagnostic File Name (.DGS)	Files Included with Reference Diskette?				
					50/60 1.06	55/65 1.03	70/80 1.10	P70 1.04	70/486 1.04
Wizard i860 Attached Processor	@0FC7	#3462	34F3062						
Audio Capture and Playback Adapter/A	@6E6C	#2784	34F2784						
Micro Channel Compatible Key Card	@6147								
Video Capture Adapter/A	@704E	#2785	34F2785						
IBM PS/2 SCSI Adapter	@8EFE	#1005	6451005		X	X	X	X	X
IBM PS/2 SCSI Adapter w/Cache	@8EFF	#1018	6451018		X	X	X	X	X
IBM 5080 Serial Link Adapter	@8484								
Realtime Interface Co-Processor Portmaster Adapter (512KB)	@8F70	#6360	53F2601	DEV141					
Realtime Interface Co-Processor Portmaster Adapter (1MB)	@8F70	#6364	53F2604	DEV141					
Realtime Interface Co-Processor Portmaster Adapter (2MB)	@8F70	#6368	53F2608	DEV141					
ESDI Fixed Disk Controller	@DDFF			ESDI	X	X	X	X	
Multi-Protocol Adapter/A	@DEFF	#3042	6450348	MPCA	X	X	X	X	X
Multi-Protocol Adapter/A	@DEFF	#3043	6451003	MPCA	X	X	X	X	X
6157 Streaming Tape Drive Adapter	@DFBF	#4160	92X1458	TAPEADAP					
5.25-inch Diskette Drive Adapter/A	@DFFA	#1007	6451007	DSKT5					
InfoWindow GPIB2 Card	@DFFC	#4239	83X9239	DFFC					
IBM 3363 Optical Disk Controller	@DF7F		63X4166	USOPDIAG					
Integrated Fixed Disk Controller	@DF9F			HARDFILE	X	X	X	X	X
Token-Ring Network Adapter/A	@E000	#4790	69X8138	E000					
Token-Ring Network 16/4 Adapter/A	@E001	#1133	16F1133	E000					
S/370 Channel Emulator/A	@E014	#3205	1674899	S370CHAN					
300/1200/2400 Internal Modem/A	@E016	#1755	94X1755	MODEM24				X	
High Speed Adapter/A	@E04E	#1028	65X1905	HSAR					
3119 Adapter/A	@E04F	#5442	94X2415	GFGR					
3270 Connection, Version A	@E7FF	#2000	25F8060	IBMCONN	X	X	X		
3270 Connection, Version B	@E1FF	#2000	25F8448	IBMCONN	X	X	X		
300/1200 Internal Modem/A	@EDFF	#0349	6450349	MODEM	X	X	X	X	X
IBM 4684 Device Channel	@EECE			US4684					
Dual Async Adapter/A	@EEFF	#1014	6451013	ASYNC	X	X	X	X	X
Display Adapter 8514/A	@EF7F	#4054	1887972	EF7F	X	X	X		X
InfoWindow VGA Control Card	@EFBF	#4239	83X9239	EFBF					
IBM Store Loop Controller	@EFCF	#6500	83X8187	USSLOOP					
IBM ISDN Interface Co-Processor/2	@EFE0								
PC Network Adapter II/A	@EFEF	#1222	1501222	NETWORK	X	X	X	X	X
Real-Time Interface Co-Processor Multiport/2	@EFF0	#6247	16F1820	MPORT		X			
Real-Time Interface Co-Processor Multiport/2	@EFF0	#6263	09F1897	MPORT		X			
X.25 Interface Co-Processor/2	@EFF0	#6401	16F1858	MPORT		X			
Personal PagePrinter Adapter/A	@EFF6	#7002	75X8267	EFF6					
3117 Adapter/A	@F04F	#1029	65X1925	GFDR					
2-8MB 80286 Memory Expansion Option	@F7F7	#8286	6450609	XEXPMEM		X			
80286 Expanded Memory Adapter/A	@F7FE	#3920	1497252	XMA					
0-8MB Expanded Memory Adapter/A†	@F7FE	#7259†	1497259	XMA					
80386 Memory Expansion Option†	@FAFF	#3019†	6450367	MEMORY		X	X	X	X
2-8MB 80386 Memory Expansion Option	@FCFF	#5211	6450605	MEMORY		X	X	X	X
Enhanced 80386 Memory Expansion Option 4MB Kit	@FDDF	#3011	34F3011	FDDF					
Enhanced 80386 Memory Expansion Option 2MB Kit	@FDDF	#3077	34F3077	FDDF					
80286 Memory Expansion Option†	@FEFE	#3006†	6450344	XEXPMEM	X	X			
System 36/38 Work Station Emulation Adapter/A	@FFF8	#6279	69X6279	FFF8					

Table 8-B. IBM PS/2 Video Modes

Display screen modes supported by PS/2 systems

BIOS Mode #	Mode Type[1]	Number of Colors[2]	Alpha Format	Alpha Box Size	Buffer Start	Max Pages	Resolution (Pixels)	Double Scan[3]	Border[7]	Display Adapter					
										Mono	CGA	EGA	MCGA	VGA	8514/A[7]
0,1	A/N	16	40x25	8x8	B8000	8	320x200	Y	N		X	X		X	X
2,3	A/N	16	80x25	8x8	B8000	8	640x320	Y	Y		X	X		X	X
0[4],1[4]	A/N	16	40x25	8x14	B8000	8	320x350	N	N			X		X	X
2[4], 3[4]	A/N	16	80x25	8x14	B8000	8	640x350	N	Y			X		X	X
0[5], 1[5]	A/N	16	40x25	8x16	B8000	8	320x400	N	N				X	X	X
2[5], 3[5]	A/N	16	80x25	8x16	B8000	8	640x400	N	Y				X	X	X
0[6], 1[6]	A/N	16	40x25	9x16	B8000	1	360x400	N	N					X	X
2[5], 3[5]	A/N	16	80x25	9x16	B8000	8	720x400	N	Y					X	X
4, 5	APA	4	40x25	8x8	B8000	1	320x200	Y	N		X	X	X	X	X
6	APA	2	80x25	8x8	B8000	1	640x200	Y	Y		X	X	X	X	X
7	A/N	-	80x25	9x14	B0000	8	720x350	N	Y	X		X		X	X
7[4]	A/N	-	80x25	9x16	B8000	8	720x400	N	Y					X	X
D	APA	16	40x25	8x8	A0000	8	320x200	Y	N			X		X	X
E	APA	16	80x25	8x8	A0000	4	640x200	Y	Y			X		X	X
F	APA	-	80x25	8x14	A0000	2	640x200	Y	Y			X		X	X
10	APA	16	80x25	8x14	A0000	2	640x350	N	Y			X		X	X
11	APA	2	80x30	8x16	A0000	1	640x480	N	Y				X	X	X
12	APA	16	80x30	8x16	A0000	1	640x480	N	Y					X	X
13	APA	256	40x25	8x8	A0000	1	320x200	Y	Y				X	X	X
8514/A	APA	256[7]	80x34	8x15			640x480	Y	Y						X
8514/A	APA	256[7]	85x38	12x20			1024x768	Y	Y						X
8514/A	APA	256[7]	46x51	22x15			1024x768	Y	Y						X

NOTES:

[1] A/N = Alphanumeric (text).
APA = All Points Addressable (Graphics).

[2] Selectable from a palette of 262,144 colors.

[3] All VGA modes are available with the 8514/A installed via the integrated VGA and the video extension interface of the Micro Channel. The 8514/A Adapter itself does not include support for VGA modes. This distinction is irrelevant to users, since all modes are available transparently.

[4] EGA Enhanced mode.

[5] MCGA Enhanced mode.

[6] VGA Enhanced mode.

[7] 8514 Memory Expansion Kit (#4081) required for 256 colors. The 8514/A supports 16 colors as shipped without the memory expansion installed.

Table 8-C. IBM PS/2 Hardware Error Codes

As reliable as the PS/2 products are, system errors are possible. Inherent in IBM architectures are RAS (reliability, availability, and servicability) features. The CBIOS (Compatibility Basic Input Output System) and ABIOS (Advanced BIOS) of the IBM PS/2 Micro Channel systems provide extensive error detection and identification routines. Because the IBM PS/2 products are sold world-wide, problems are identified with on-screen numbers rather than with words in order to avoid language dependencies. The following list is helpful in associating the error numbers with the appropriate description of the problem as diagnosed by the computer itself.

All personal computer error codes are represented with the device number followed by two digits other than 00. The device number plus 00 represents successful completion of the test.

Audio Code	Description
Click, but no beeps	Power good, can't run POST
Continuous beep	Power problem
Repeating short beeps	Power problem
1 long and 1 short high beep	Clock speed too fast
1 long and 2 short beeps	Display problem
1 short beep	Display problem
1 long and 3 short beeps	EGA problem
No display/sound	Power problem

Error Code	Description
1XX	SYSTEM
101	System board or interrupt failure
102	ROM checksum error or timer failure during real time clock 64 byte CMOS RAM test
103	BASIC ROM checksum error or timer interrupt failure during 2KB CMOS RAM test
104	8259 interrupt controller error or protect mode failure during real time clock timing test
105	8253 timer error or last 8042 command not accepted
106	Converting logic test
107	Interrupt failure or bot NMI test
108	Bus test
109	Direct memory access test error or low meg chip select test, DMA, or arbitration failure
110	Planar parity error
111	Parity error - test 80286 protect mode
112	Watchdog time out - test 80386 extended registers
113	DMA arbitration time out - test 80386 instructions
114	External ROM checksum error - test 80386 32-bit addressing mode
115	80386 protect mode (80386 TSSs, VM8086, paging)
121	Unexpected hardware interrupts occurred - test bot reset of processor
131	Cassette wrap test failed - test DMA compatibility registers
132	DMA extended registers
133	DMA verify logic
134	DMA arbitration logic
152	Realtime clock or CMOS error
160	Planar ID not recognized
161	Systems options not set - boot from Reference Diskette and configure
162	Systems options not set - boot from Reference Diskette and configure
163	Time/date not set - boot from Reference Diskette and configure
164	Memory Size Error - boot from Reference Diskette and configure
165	Systems options not set - card ID mismatch - boot from Reference Diskette and configure

Error Code	Description
166	Adapter busy error
167	Clock not updating
199	User indicated configuration not correct
2XX	MEMORY
201	Memory test failed, data miscompare, parity error or bad adapter
202	Memory address error
203	Memory address error or refresh failure
204	Relocated memory (run diagnostics again)
205	CMOS error
207	ROM failure
211	Base 64K on I/O channel failed
215	Base 64K on daughter card 2 card failed
216	Base 64K on daughter card 1 card failed
3XX	KEYBOARD
301	Keyboard did not respond to software reset correctly or a stuck key failure was detected. If a stuck key was detected, the scan code for the key is displayed.
302	User indicated error from the keyboard test
303	Keyboard or system board error
304	System board error
305	Keyboard +5v error
4XX	VIDEO OR PARALLEL/SERIAL PORT
401	Video test failed, CRT (display) error or parallel port error
408	User indicated display attributes failure
416	User indicated character set failure
424	User indicated 80X25 mode failure
432	Parallel port test failed
5XX	VIDEO DISPLAY
501	Video test failed or CRT (display) error
508	User indicated display attribute failure
516	User indicated character set failure
524	User indicated 80x25 mode failure
532	User indicated 40x25 mode failure
540	User indicated 320x200 graphics mode failure
548	User indicated 640x200 graphics mode failure
6XX	DISKETTE DRIVE
601	Diskette drive or controller error
602	Diskette boot record error
606	Diskette verify function failed
607	Write protected diskette
608	Bad command diskette status returned
610	Diskette initialization failed
611	Timeout - diskette status returned
612	Bad NEC - diskette status returned
613	Bad DMA - diskette status returned
621	Bad seek - diskette status returned

Error Code	Description
622	Bad CRC - diskette status returned
623	Record not found - diskette status returned
624	Bad address mark - diskette status returned
625	Bad NEC seek - diskette status returned
626	Diskette data compare error
630	Index stuck HI (drive A)
631	Index stuck LO (drive A)
632	Track 0 stuck off (drive A)
633	Track 0 stuck on (drive A)
640	Index stuck HI (drive B)
641	Index stuck LO (drive B)
642	Track 0 stuck off (drive B)
643	Track 0 stuck on (drive B)
650	Drive speed error
651	Format failure
652	Verify failure
653	Read failure
654	Write failure
655	Controller error
656	Drive failure
657	Write protect stuck (protected)
658	Change line stuck (changed)
659	Write protect stuck (unprotected)
660	Change line stuck (unchanged)
7XX	MATH CO-PROCESSOR
702	Math co-processor exception errors test
703	Math co-processor rounding test
704	Math co-processor arithmetic test 1
705	Math co-processor arithmetic test 2
706	Math co-processor arithmetic test 3 (80387 only)
707	Math co-processor combination test
708	Math co-processor integer/store test
709	Math co-processor equivalent expressions
710	Math co-processor exceptions (interrupts)
711	Math co-processor save state (FSAVE)
712	Math co-processor protected mode test
713	Math co-processor special test (voltage/temp sensitive)
9XX	PARALLEL PRINTER ADAPTER
901	Printer adapter DATA REGISTER LATCH error
902	Printer adapter CONTROL REGISTER LATCH error
903	Printer adapter register address decode error
904	Printer adapter address decode error
910	Status line(s) wrap connector error
911	Status line bit 8 wrap error
912	Status line bit 7 wrap error
913	Status line bit 6 wrap error
914	Status line bit 5 wrap error
915	Status line bit 4 wrap error
916	Printer adapter interrupt wrap failed
917	Unexpected printer adapter interrupt
92x	Feature register error (Special card)
10XX	PARALLEL PRINTER ADAPTER
11XX/12XX	COMMUNICATIONS
1101	Asynchronous error or 16550 ASYNC chip error
1101	POST error
1102	Card selected feedback error
1103	Port 102H register test failure
1106	Serial option can not be put to sleep
1107	Cable error
1108	ASYNC IRQ3 error
1109	ASYNC IRQ4 error
1110	16550 ASYNC chip register failure

Error Code	Description
1111	Internal wrap test of 16550 modem control line failure
1112	External wrap test of 16550 modem control line failure
1113	16550 transmit error
1114	16550 receive error
1115	16550 receive error data not equal transmit data
1116	16550 interrupt function error
1117	16550 fails baud rate test
1118	16550 interrupt driven receive external data wrap test failure
1119	16550 FIFO
1201	Can not detect presence of dual ASYNC adapter
1202	Dual ASYNC adapter card selected feedback error
1203	Dual ASYNC adapter port 102H register test failure
1206	Dual ASYNC adapter serial option can not be put to sleep
1207	Dual ASYNC adapter cable error
1208	Dual ASYNC adapter ASYNC IRQ3 error
1209	Dual ASYNC adapter ASYNC IRQ4 error
1210	16550 ASYNC chip register failure
1211	Internal wrap test of 16550 modem control line failure
1212	External wrap test of 16550 modem control line failure
1213	16550 transmit error
1214	16550 receive error
1215	16550 receive error data not equal transmit data
1216	16550 interrupt function error
1217	16550 fails baud rate test
1218	16550 interrupt driven receive external data wrap test failure
1219	16550 FIFO
1225	16550 ASYNC chip register failure
1226	Internal wrap test of 16550 modem control line failure
1227	External wrap test of 16550 modem control line failure
1228	16550 transmit error
1229	16550 receive error
1230	16550 receive error data not equal transmit data
1231	16550 interrupt function error
1232	16550 fails baud rate test
1233	16550 interrupt driven receive external data wrap test failure
1234	16550 FIFO
13XX	GAME CONTROL ADAPTER
1301	Game control adapter test failed
1302	Joystick test failed
14XX	PRINTER
1401	Printer failure
1402	Printer NOT READY error
1402	Out of paper
1403	Printer NO PAPER error or interrupt failure
1404	System board time out
1405	Parallel adapter failure
1406	Presence test failed
15XX	SDLC COMMUNICATIONS ADAPTER

Error Code	Description
17XX	FIXED DISK
1701	Fixed disk POST error
1702	Fixed disk adapter error
1703	Fixed disk drive error
1704	Fixed disk adapter or drive error
1750	Drive "x" verify failure
1751	Drive "x" read failure
1752	Drive "x" write failure
1753	Drive "x" random read test error
1754	Drive "x" seek test error
1755	Controller failure
1756	Controller ECC test failure
1757	Controller head select failure
1780	Fixed disk drive 0 time out
1781	Fixed disk drive 1 time out
1782	Fixed disk controller error
1790	Fixed disk drive 0 error
1791	Fixed disk drive 1 error
18XX	I/O EXPANSION UNIT
1801	I/O Expansion unit POST error
1810	Enable/Disable failure
1811	Extender card wrap test failed (disabled)
1812	High order address lines failure (disabled)
1813	Wait state failure (disabled)
1814	Enable/Disable could not be set on
1815	Wait state failure (enabled)
1816	Extender card wrap test failed (enabled)
1817	High order address lines failure (enabled)
1818	Disable not functioning
1819	Wait request switch not set correctly
1820	Receiver card wrap test failure
1821	Receiver high order address lines failure
20XX	BISYNC COMMUNICATIONS ADAPTER
21XX	ALTERNATE BISYNC COMMUNICATIONS ADAPTER
22XX	CLUSTER ADAPTER
23XX	PLASMA MONITOR ADAPTER
24XX	ENHANCED GRAPHICS ADAPTER
2401	Planar video error
2402	Diagnostic video error
26XX	XT/370 MEMORY AND PLANAR
27XX	XT/370 EMULATOR CARD
28XX	3278/79 EMULATION
29XX	COLOR PRINTER
30XX	PRIMARY PC NETWORK ADAPTER
3001	CPU failure
3002	ROM failure
3003	ID failure
3004	RAM failure
3005	HIC failure
3006	+/- 12v failed
3007	Digital loopback failure
3008	Host detected HIC failure
3009	Sync fail & No Go Bit
3010	HIC test OK & No Go Bit
3011	Go Bit & no CMD 41
3012	Card not present
3013	Digital failure (fall thru)
3015	Analog failure
3041	Hot carrier (not this card)
3042	Hot carrier (this card)

Error Code	Description
31XX	SECONDARY NETWORK ADAPTER
3101	CPU failure
3102	ROM failure
3103	ID failure
3104	RAM failure
3105	HIC failure
3106	+/- 12v failed
3107	Digital loopback failure
3108	Host detected HIC failure
3109	Sync fail & No Go Bit
3110	HIC test OK & No Go Bit
3111	Go Bit & no CMD 41
3112	Card not present
3113	Digital failure (fall thru)
3115	Analog failure
3141	Hot carrier (not this card)
3142	Hot carrier (this card)
32XX	DISPLAY ADAPTER (3270PC OR AT)
35XX	ENHANCED DISPLAY STATION EMULATION ADAPTER
3504	Adapter connected on the twinaxial cable during offline test
3508	Workstation address in use by another workstation or Diagnostic diskette from another IBM PC was used
3509	Diagnostic program failing (recreate Adapter Integrated Diagnostic diskette on a blank diskette)
3540	Work station address invalid, not configured at the controller. Twinaxial cable not connected , or is failing. Diagnostic diskette from another IBM PC was used.
3588	Enhanced display station emulation adapter Feature not installed Device I/O address switches set incorrectly
3599	Diagnostic program failing (recreate Adapter Integrated Diagnostic diskette on a blank diskette)
36XX	GPIB ADAPTER
38XX	DATA ACQUISITION AND CONTROL ADAPTER
39XX	PROFESSIONAL GRAPHICS ADAPTER
44XX	DISPLAY ATTACHMENT UNIT AND DISPLAY
45XX	IEEE INTERFACE ADAPTER(IEEE-488)
46XX	ARTIC MULTIPORT INTERFACE ADAPTER
56XX	FINANCIAL COMMUNICATIONS SYSTEM
71XX	VOICE COMMUNICATIONS ADAPTER
7101	I/O control register
7102	Instruction or external data memory
7103	PC to VCA interrupt
7104	Internal data memory
7105	DMA
7106	Internal registers
7107	Interactive shared memory
7108	VCA to PC interrupt
7109	DC wrap
7111	External analog wrap & tone output
7112	Mic to spkr wrap
7114	Telephone attach test
74XX	8514/A DISPLAY ADAPTER
76XX	4216 PAGEPRINTER
7601	Printer adapter card error
7602	Printer adapter card error
7603	Printer error
7604	Printer cable error
86XX	MOUSE
8601	System board error or mouse error
8602	User indicated mouse error
8603	System board or mouse error
8604	System board or mouse error
96XX	32-BIT SCSI ADAPTER W/CACHE

Error Code	Description
100XX	MULTIPROTOCOL COMMUNICATIONS ADAPTER
101XX	MODEM AND COMMUNICATIONS
10101	Can not detect presence of modem
10102	Card selected feedback error
10103	Port 102H register test failure
10106	Serial option can not be put to sleep
10108	ASYNC IRQ3 error
10109	ASYNC IRQ4 error
10010	16450 ASYNC chip register failure
10111	Internal wrap test of 16450 modem control line failure
10113	16450 transmit error
10114	16450 receive error
10115	16450 receive error data not equal transmit data
10116	16450 interrupt function error
10117	16450 fails baud rate test
10018	16450 interrupt driven receive external data wrap test failure
10125	Modem reset result code error
10126	Modem general result code error
10127	Modem S registers write/read error
10128	Modem turn echo on/off error
10129	Modem enable/disable result codes error
10130	Modem enable number/word result codes error
10133	Connect results for 300 baud not received
10134	Connect results for 1200 baud not received
10135	Modem fails local analog loop back test at 300 baud
10136	Modem fails local analog loop back test at 1200 baud
10137	Modem does not respond to escape/reset sequence
10138	S reg 13 does not show correct parity or number of data bits
10139	S reg 15 does not reflect correct bit rate

Error Code	Description
104XX	UNKNOWN; TRY REPLACING DRIVE, CONTROLLER, OR SYSTEM BOARD
10450	Replace drive (read write test failed)
10451	Replace drive (read verify test failed)
10452	Replace drive (seek test failed)
10453	Replace drive (wrong device type indicated)
10454	Controller (controller test failed sector buffer test)
10455	Controller failure
10456	Controller (diagnostic command failure)
10461	Drive (format error)
10462	Controller (head select error)
10463	Drive (read/write sector error)
10464	Drive (primary map unreadable)
10465	Controller (ECC 8 bit error)
10466	Controller (ECC 9 bit error)
10467	Drive (soft seek error)
10468	Drive (hard seek error)
10469	Drive (soft seek error count exceeded)
10470	Controller (attachment diagnostic error)
10471	Controller (wrap mode interface error)
10472	Controller (wrap mode drive select error)
10480	Drive 0 seek failure
10480	Controller (com/data - attention bad)
10481	Drive 1 seek failure
10481	Controller (xfr req - ready bad)
10482	Controller test failure
10482	Controller (drv sel 1 - xfr ack bad)
10483	Controller reset failure
10483	Controller (drv sel 0 - config stat bad)
10484	Controller (head sel 3 - selected bad)
10485	Controller (head sel 2 - selected bad)
10486	Controller (head sel 1 - selected bad)
10487	Controller (head sel 0 - selected bad)
10488	Controller (rg - cmd complete 2)
10489	Controller (wg - cmd complete 1)
10490	Drive 0 read failure
10490	Controller (drive connected no test done)
10491	Drive 1 read failure
10498	Controller failure
107XX	1.2MB INTERNAL EXTERNAL ADAPTER
112XX	16-BIT SCSI ADAPTER (W/O CACHE)
166XX	PRIMARY TOKEN-RING NETWORK PC ADAPTER
167XX	ALTERNATE TOKEN-RING NETWORK PC ADAPTER
194XX	ADAPTER MEMORY MODULE
210XX	SCSI FIXED DISK CONTROLLER
215XX	SCSI CD-ROM

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